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Westward Journey

A Reading A-Z Level Y Benchmark Book

Word Count: 1,600




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WESTWARD JOURNEY



Written by Jan Goldberg
Illustrated by Linda Pierce

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Westward Journey
Level Y Benchmark Book
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Correlation

LEVEL Y	
Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A



1848, west of Independence, Missouri

"How in all creation did I land here?" thought eleven-year-old Jessie Townsend. The wheels of his family's covered wagon rolled over the uneven ruts that marked the beginning of a 2,000-mile wagon-train journey west. Oregon Country promised flowers that bloomed all year, free land ripe for farming, and rivers and streams overflowing with fish; but, none of this bounty mattered to Jessie. His closest friends and favorite fishing hole remained in Ohio.

With a clenched jaw and downward-fixed eyes, Jessie jostled around—back and forth, up and down—on one of the 36 wagons slowly rolling west, and refused to see the beauty of the wide-open spaces. "Why did we ever leave Ohio?" he thought as he leaped down from the wagon. With slumping shoulders, he then grabbed a pebble from his shoe and forcefully flung it to the ground.

Huddled together inside the oxen-pulled wagon were Jessie's mother and eight-year-old sister. His mother and sister looked alike with their brightly-colored cotton dresses and bonnets that his mother had hand-sewn. Jessie and his father looked like mirror images in the grey cotton pants, grey shirts, and hats that Jessie's mother had also sewn. Jessie and his father routinely walked side by side during the 10 to 15 miles the wagon train travelled each day.

In the wagon following, another eleven-year-old—a blond-haired, blue-eyed girl named Bessie—noticed Jessie walking on the flat **prairie** beside his family's wagon. She thought he looked about her age and wondered whether he might be interested in playing with her and Wag.

Bessie jumped down from the wagon and threw Wag's favorite ball into the high prairie grass in the general direction of the boy. "Come on, Wag," Bessie **coaxed**, "go fetch."

Wag, a four-year-old golden retriever, took off in an instant. He cavorted like a puppy as he sprang forward, hurtled toward the ball, retrieved it, and presented it back to Bessie before she could take more than one step. The boy ahead barely noticed the **ruckus** created by the energetic dog's mad dash for his toy. Bessie's attempt to snare the boy's attention failed.



"*Maybe he doesn't care beans for dogs,*" Bessie thought. Then, Wag distracted her by nudging her hand and dropping the ball into it. Though Wag was a dog, he moved as quickly as a rabbit and could play for hours and hours and never tire. Bessie likened herself more to a tortoise than a hare and was always first to end their fetching games.

As Bessie walked beside the wagon a few days later, she began to feel dizzy, and the feeling worsened as the day grew longer. "*Uh-oh, my stomach is doing flip-flops,*" she thought. "*And my head is beginning to feel like flour kneaded into pie dough.*" Bessie didn't want to be treated like a baby and be **confined** to the wagon—so she hid her illness as long as possible.



At dinnertime, however, when the wagon train set up camp for the night. Bessie could no longer fake feeling well. When her mother, Sarah, caught a glimpse of her in the firelight, she immediately felt Bessie's forehead and realized that her daughter was burning up with fever.

"Go lie down, Bessie," Sarah ordered. "I'll bring you a cupful of bitters to drink. I want you lying on that mattress until you're feeling better."

"Yes, ma'am, but what about my responsibilities to Wag? Who will take care of him?"

"I'll feed him and give him water," Sarah said.

"Yes, but who will **entertain** him? He's used to me playing with him every day."

"I'm sorry, Bessie, but none of us has the time to watch him or play with him," said her father, William. "Don't worry. He'll be fine."

That night, Bessie slept fitfully as her fever climbed ever higher. Plaguing her sleep were nightmares of Wag being lonely, wandering the vast prairie, and searching for her from far behind the wagon train.

Two mornings later as the wagon train prepared to break camp, Jessie walked up to Bessie's father.

"Uh, pardon me, sir, where is the little girl who plays with the dog? Is she in good health?"

"I'm afraid our daughter is ill with fever, so she's abed inside the wagon."

"Oh, sorry," said Jessie apologetically, knowing others in the wagon train were suffering from a similar affliction. "Where's her dog?" he asked.

"He sleeps next to her most of the day," answered Bessie's father.

"I mean no disrespect, but is he getting any exercise?" Jessie asked. "Is anyone paying attention to him when he's **rambling** around?"

"We're too busy to worry about that, I'm afraid," said Sarah as she reloaded the breakfast supplies.

"Well, maybe I could come by and tend to his exercise each day," offered Jessie, "at least until your daughter is feeling better."



"Well, that would be very kind of you," said Sarah. "Bessie would truly appreciate your taking an interest in Wag."

"Oh, it's no trouble, ma'am," said Jessie. "I'll come back later this afternoon to tend to him."

That night, Bessie's illness became as **severe** as her parents had ever seen. Chills shook Bessie's body as Sarah spoon-fed her all the medicine they had to make her well. It seemed as though nothing improved her condition. Earlier that morning, an elderly woman had died from sickness.

Sarah could not bear the thought of losing her child. Bessie awoke delirious several times in the night but didn't notice her mother's tear-stained cheeks. About an hour before dawn, Bessie's fever broke. Sarah's shoulders shook as she wept with joy, and William comforted her.



After a brief amount of restful sleep, Sarah and William had their team of oxen plodding along the trail when a thunderous boom echoed across the countryside.

"Hurry, circle the wagons," shouted the trail leader from a few wagons ahead. Bessie's parents hurried to do as they were told though their daughter was **oblivious** to the trouble heading in their direction. "Circle the wagons. Unwelcome company's about to charge past us. Round up the animals and the children. Make sure everyone and everything is accounted for. We don't have much time!"

Although he advised everyone not to panic, it was clear in listening to the voice of the wagon-train leader, that he too was frightened. His warning traveled like wildfire throughout the train, and everyone scurried to direct their wagons into a circular pattern, placing the oxen in the center so the vital animals wouldn't **stampede**.

Just as the circle had barely been completed, a huge herd of enormous creatures with brown, shaggy coats rushed around it. Everyone inside the **protection** of the ring felt the earth shake as countless buffalo kicked up a blanket of dust that enveloped everything for hours. Everyone literally

held their breath as much as possible, and no one dared move outside the circle until the wagon train leader signaled that every single buffalo in the herd had passed by.



When it was again quiet enough to hear the call of a bird, the pioneers felt it was safe to venture out. They moved their wagons back to their usual single-file line and began heading west once again. "Where's Wag?" asked a weak voice from inside the wagon.

"I don't know," said William. "I haven't seen him since before the buffalo stampede."

"Oh no, you don't suppose he got scared and ran off . . . do you?" asked Bessie.

"I don't know, Bessie, but I'm afraid that's very possible," answered her father.

"Well, I'm going to go search for him," she said with purpose.

"No, you're not. Your fever may have broken overnight, but you're far from well. I don't want you wandering about, getting dizzy again, and falling and hurting yourself or worse."

"I don't care about any of that. I only care about Wag. Please, you know I HAVE to find him. We can't leave him out here alone." Visions of Bessie's nightmare haunted her.

"We don't really have a choice," said her father sadly, wishing he'd done more to **discourage** his daughter from becoming so attached to an animal.

"I think I have what you're looking for," said Jessie, who seemed to appear out of thin air with Wag trailing along behind him.

"Wag, boy, you're safe!" exclaimed Bessie as color returned to her cheeks for an instant, and she climbed down from the wagon despite her mother's protests.



Jessie explained that he'd found Wag hiding under his family's wagon just before the buffalo herd stormed past. Wag nearly bolted out into the herd, but Jessie was able to coax him into the wagon, where he was **content** to play tug-of-war with a section of old rope Jessie had.

Bessie scratched Wag behind his ears and looked warily at Jessie, who couldn't help but crack a giant grin as Wag started to lick every inch of Bessie's face.

Bessie couldn't help but giggle, which set Jessie to hooting. Wag happily swished his tail back and forth, and nearly knocked Bessie over with his enthusiastic tongue bath.

"I don't know what I would have done if you hadn't saved Wag," said Bessie, serious once more.

"I know exactly how you feel," Jessie said, pausing to remember the friends he'd most likely never see again.

"When you're feeling better, how about the three of us play fetch together?" he asked tentatively.

"You bet," agreed Bessie, figuring that if Wag thought this boy was all right, she could give him a chance, too. Having another friend with whom to spend time might make the demanding journey ahead a little easier to take—for both of them.



Glossary

coaxed (<i>v.</i>)	to be persuaded to do something through gentle urging (p. 5)
confined (<i>v.</i>)	to be kept within a place using limits or boundaries (p. 6)
content (<i>v.</i>)	happy or pleased (p. 14)
discourage (<i>v.</i>)	to keep something from happening by doing or saying something to prevent it (p. 12)
entertain (<i>v.</i>)	to get the attention of someone by providing amusing or interesting activities (p. 7)
oblivious (<i>adj.</i>)	completely unaware (p. 10)
prairie (<i>n.</i>)	flat, grassy land (p. 4)
protection (<i>n.</i>)	the quality of providing safety (p. 10)
rambling (<i>v.</i>)	walking around without a set direction (p. 8)
ruckus (<i>v.</i>)	uncontrolled, noisy behavior (p. 5)
severe (<i>adj.</i>)	extremely bad or dangerous (p. 9)
stampede (<i>n.</i>)	the mad dash of a herd of wild animals (p. 10)

Reading a-z Running Record

Level Y

Student's Name _____ Date _____

Westward Journey
156 words

Have the student read out loud as you record. Assessed by _____

page	E = errors S-C = self-correction M = meaning S = structure V = visual	E	S-C	E			S-C		
				M	S	V	M	S	V
3	1848, west of Independence, Missouri “How in all creation did I land here?” thought eleven-year-old Jessie Townsend. The wheels of his family’s covered wagon rolled over the uneven ruts that marked the beginning of a 2,000-mile wagon-train journey west. Oregon Country promised flowers that bloomed all year, free land ripe for farming, and rivers and streams overflowing with fish; but, none of this bounty mattered to Jessie. His closest friends and favorite fishing hole remained in Ohio.								
4	With a clenched jaw and downward-fixed eyes, Jessie jostled around-back and forth, up and down—on one of the 36 wagons slowly rolling west, and refused to see the beauty of the wide-open spaces. “Why did we ever leave Ohio?” he thought as he leaped down from the wagon. With slumping shoulders, he then grabbed a pebble from his shoe and forcefully flung it to the ground. Huddled together inside the oxen-pulled wagon were Jessie’s mother and eight-year-old sister.								
Totals									

Accuracy Rate:

Error Rate:

Self-correction Rate:

Early Birds: Fossils and Feathers

A Reading A-Z Level Y Benchmark Book

Word Count: 1,240



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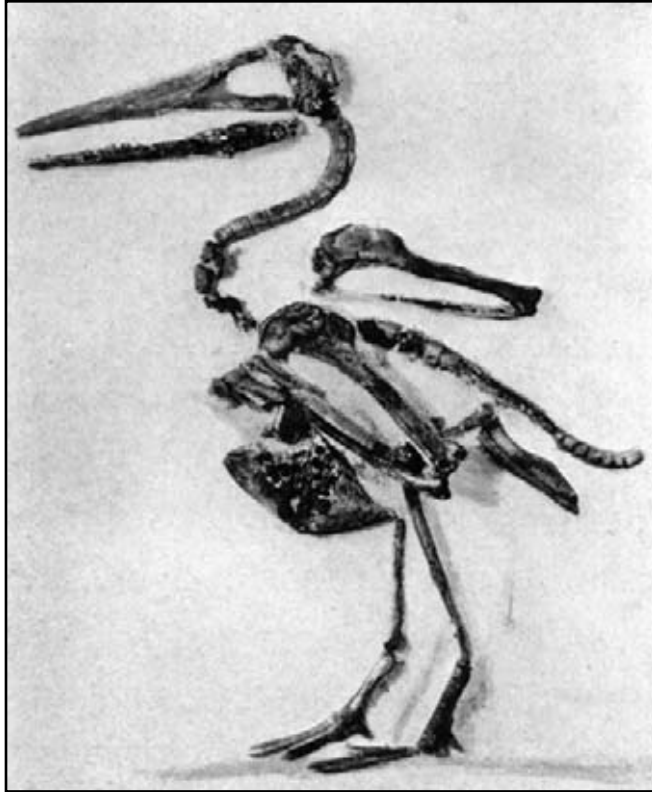
Early Birds: Fossils and Feathers



Written by Alfred J. Smuskiewicz

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Early Birds: Fossils and Feathers



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Correlation

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Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A

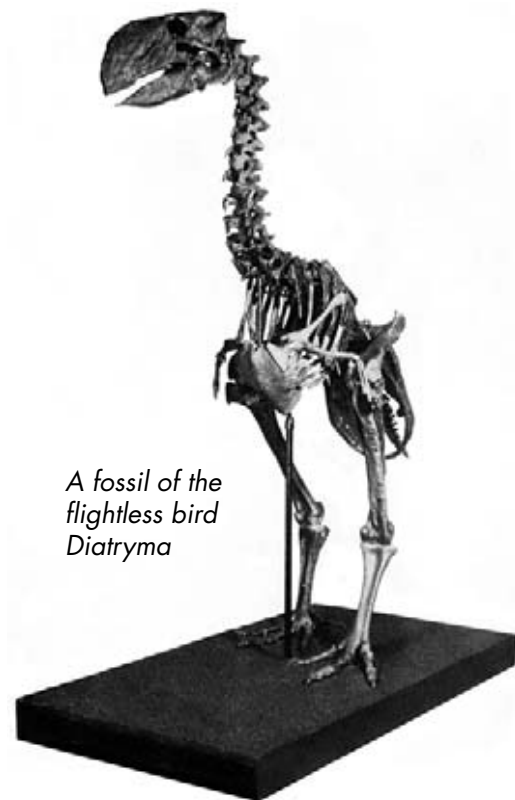


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Introduction

Most of the **species** of animals that have ever lived on Earth suffer extinction. When the conditions of the environment change, such as when the climate cools or the quantity of food decreases, a species may die out if it cannot **adapt** to the new conditions. **Paleontologists** have learned about a wide variety of such extinct organisms from fossils—evidence of prehistoric life preserved in rock or other material.

Some fossils are simple marks that an animal produced while moving, such as footprints or



These fossilized remains of a prehistoric bird contain many secrets of the past.

trails left in the ground. Others are hollowed-out **impressions** of an animal's entire body made in rock. Still others are preserved remains of an animal's body, such as bones or shells.

Fossils show how new kinds of species developed over eons. For example, scientists have discovered fossils that lead them to believe that birds developed from reptiles more than 150 million years ago; those reptiles may have been dinosaurs.

Information from Fossils

When the vast majority of animals die, the **decomposition** activities of bacteria and fungi cause their bodies to gradually break down and disappear. However, if conditions are suitable, a dead animal may transform into a fossil, leaving behind clues about its physical characteristics and how it lived.

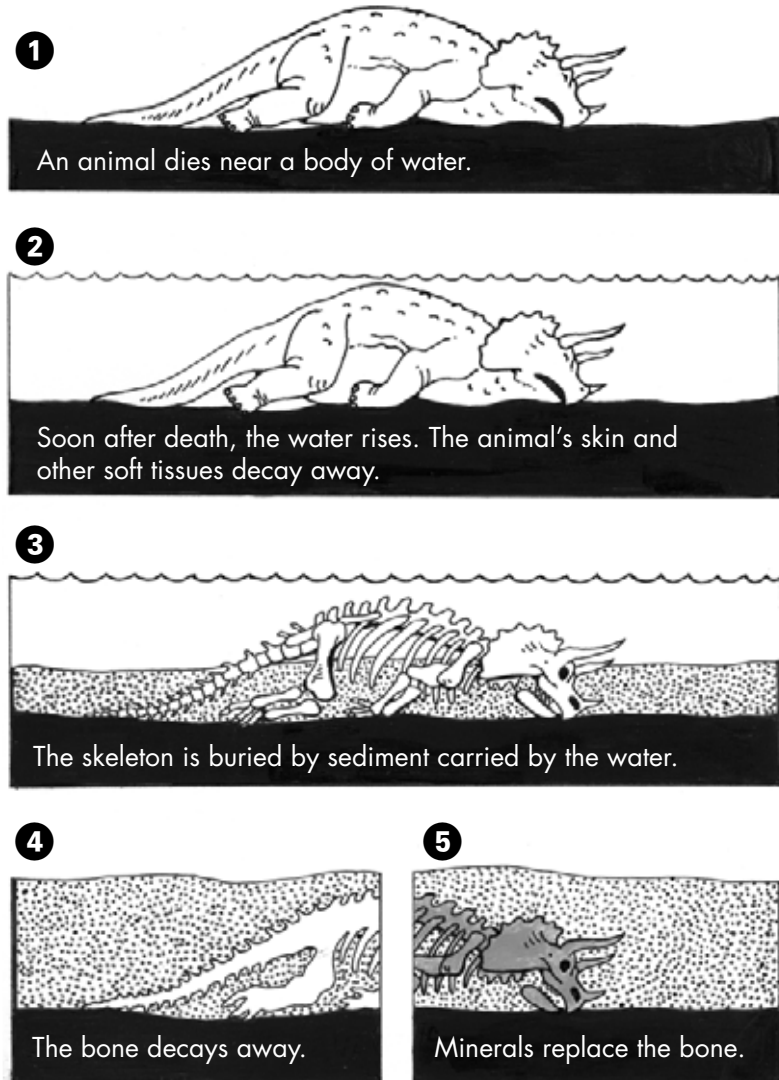
Typically, an animal that becomes immortalized as a fossil is buried in sediment—such as mud or sand—immediately after it dies.



John Day Fossil Beds in Oregon is typical of places fossils are found.

This is more likely to happen in or near rivers, the sea, or other bodies of water. Water that carries minerals, such as calcium, then soaks into microscopic spaces inside the bones of the body. As more and more of the bone tissue dissolves and decays away, increasing amounts of minerals take the place of the bone. In time, a rocky duplicate of the animal's skeleton is left.

When the body decays completely away, impressions of an animal's body form—showing such features as feathers or scales. All that then remains is the hollow space where the animal's body was, surrounded by sediment.



The bones and other characteristics of a fossil tell scientists what the animal looked like. These features also enable scientists to compare the animal with species living today. Similarities and differences between the features in the fossil and those of living organisms may reveal how the extinct creature behaved. For example, if the bones in the fossil are similar to bones in bird wings today, maybe the animal was capable of sustained flight. Such traits may also indicate that modern birds are related to this extinct animal.

Paleontologists use different procedures to determine how old a fossil is—that is, to learn when the animal captured as a fossil lived.

Because sediment accumulates year after year, fossils found in deeper sediment are older than fossils in sediment closer to Earth's surface. Scientists obtain their best estimates of a



Paleontologists discover fossils, study the fossils, and sometimes help display the fossils in museums.

fossil's age by analyzing certain chemicals in the rock that contains the fossil.

Prehistoric Birds

Paleontologists have unearthed numerous fossils of extinct prehistoric birds. The earliest



known bird fossils are of a primitive reptile-like bird called *Archaeopteryx* (AHR-kee-OP-tuhr-ihks), which lived approximately 150 million years ago. These fossils offer compelling evidence that birds **descended** from reptiles.

Fossils of *Archaeopteryx*, such as this one, are among the most important fossils ever discovered.

How Old Is That Fossil?

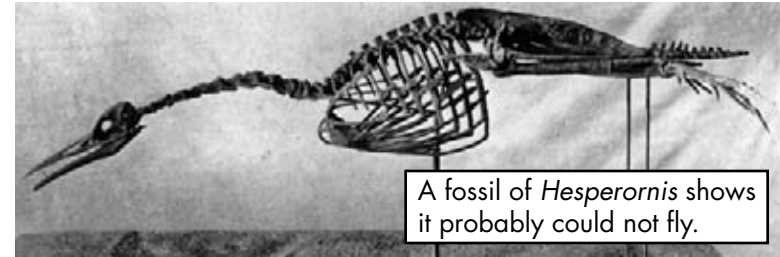
The main chemical technique that paleontologists use to estimate the age of fossils is called radioisotope dating. This method is based on the fact that chemicals called radioactive isotopes break down to form other chemicals at a known rate over time. By comparing the amount of radioactive isotopes left in a fossil with the amount of their breakdown products, scientists can calculate how long this decay process has been going on. That calculation, in turn, tells scientists how long ago the fossil formed.

The fossils of *Archaeopteryx* show that this crow-sized animal had some characteristics resembling birds and others resembling reptiles. Like modern birds, *Archaeopteryx* had feathers, wings, and a “wishbone” (a forked bone in the upper chest). However, like a reptile, it had teeth and a long, bony tail. It also had three “fingers” with claws on each wing.

Archaeopteryx probably flew rather poorly. Scientists base that conclusion on the structure of the animal’s sternum (breastbone) seen in fossils. The sternum of *Archaeopteryx* was flat. Modern birds have a sternum with a protruding part where robust muscles used in flight are attached. Without such a sternum, *Archaeopteryx* would have lacked powerful flight muscles.



Archaeopteryx (top) and *pterosaurs* (left) were some of the first flyers besides insects.



Paleontologists have discovered several fossils younger than those of *Archaeopteryx* that depict other birds. These fossils reveal how birds developed progressively modern traits over time.

Hesperornis (HES-per-ORR-niss) and *Ichthyornis* (ICK-thee-ORR-niss) were two kinds of aquatic birds that lived approximately 90 million years ago. Fossils of *Hesperornis* show that this bird looked like a large loon, with big webbed feet to assist it in swimming. It also had a beak lined with tiny teeth to enable it to catch fish. However, *Hesperornis* had only **rudimentary** wing bones, so it could not fly. *Ichthyornis* resembled a gull, with elongated pointed wings. It was probably an excellent flyer that dived into the sea to capture fish.

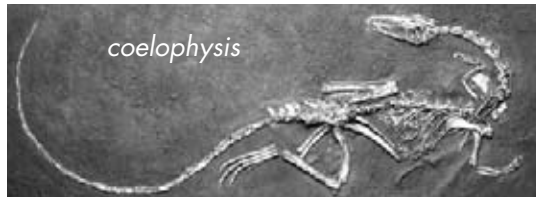
Fossils prove that many of the main types of birds we know today had developed by about 35 million years ago. These included birds that bore resemblance to modern chickens, doves, ducks, parrots, penguins, owls, and songbirds.

Birds from Dinosaurs?

Paleontologists theorize that fossils depicting birds with reptile-like characteristics are signs that birds developed from reptiles. Scientists have also uncovered fossils of dinosaurs that possessed feathers and other bird-like traits. These fossils provide evidence that dinosaurs were the reptiles from which birds developed.

Fossils indicate that **carnivorous** dinosaurs called coelurosaurs (SILL-ur-oh-sorz) were like birds in many ways—though scientists classify them as true dinosaurs. The fossils of the most bird-like members of the coelurosaur group are approximately 155 million to 135 million years old. They show that these animals were small for dinosaurs, most ranging in length from 2 to 10 feet (0.6–3 meters). They ran rapidly on two long, slender hind legs, which each had four, clawed toes. Their bones were hollow and lightweight. They had sizable eyes. Some even had feathers.

All of these traits are similar to those of birds. Since fossils exhibit these attributes, it's logical to conclude that coelurosaurs developed into birds.



The features seen in *Compsognathus* and other coelurosaur fossils bear several similarities to the skeletons of modern birds.

One of the coelurosaurs that paleontologists understand best from fossils is *Compsognathus* (KOMP-sog-NAY-thus). It is known from two well-preserved fossils, about 145 million years old, which were discovered in Europe.

Compsognathus was one of the smallest dinosaurs that ever lived—some of these creatures were only the size of a chicken. *Compsognathus* had a long, thin neck and tail and long hind legs. On each of its short front legs, it had only two claws—an unusual feature for a dinosaur. Like other coelurosaurs, *Compsognathus* hunted by running after insects, lizards, and other diminutive animals and grabbing them with its razor-sharp claws and teeth.

Scientists know what this dinosaur ate because one of the fossils of *Compsognathus* includes the remains of its last meal in its stomach. The type of lizard seen in the stomach had extremely long legs, so this lizard must have been a fast runner. Thus, *Compsognathus* had to be quick to capture this prey.

Compsognathus was a small dinosaur that was similar to a fast-running, insect-catching bird.



Fossil Bird in Its Egg

A 121-million-year-old fossil provides evidence that some prehistoric birds—unlike most birds today—could feed themselves immediately after hatching from their eggs. The fossil shows the outline of an egg with a baby bird still curled up inside. The unhatched bird had a complete set of feathers, strong-looking bones, and a large skull. Most birds today are weak and naked when they hatch and must be fed by their parents.

Conclusion



Much has been learned about prehistoric animal life from fossils. Some of the most fascinating fossils ever uncovered prove that, ages ago, there were creatures that had some

characteristics of birds and other characteristics of reptiles. Fossils of these organisms lead scientists to theorize that birds developed from dinosaurs.

Dinosaurs roamed the Earth for more than 150 million years, but they were unable to adapt when environmental conditions changed about 65 million years ago. According to scientists, Earth's climate may have changed dramatically around that time, perhaps as the result of a **meteorite** impact. Although dinosaurs did not survive this change, birds did. Today, there are more than 9,700 species of birds thriving from the frigid Arctic and Antarctic to the torrid tropics.

Some scientists actually classify birds as living dinosaurs. So the next time you see a songbird singing outside your window, might you really be watching and listening to a dinosaur?



Era*	Period*	Life That Appeared
Cenozoic (65–present)	Quaternary (2–present)	Humans 
	Tertiary (65–2)	Horses, apes 
Mesozoic (248–65)	Cretaceous (145–65)	Flowering plants 
	Jurassic (213–145)	Birds, mammals
	Triassic (248–213)	Dinosaurs 
Paleozoic (543–248)	Permian (286–248)	Seed plants 
	Carboniferous (360–286)	Reptiles, giant insects
	Devonian (410–360)	Sharks, amphibians 
	Silurian (440–410)	Mosses, coral reefs
	Ordovician (505–440)	Squid-like nautiloids 
	Cambrian (543–505)	Trilobites, mollusks, jawless fish
	Precambrian time (4.5 billion to 543 million)	Bacteria, worms, jellyfish 
*in millions of years		
Scientists divide Earth's history into different eras and periods of time. During which era and period did birds first appear?		

Glossary

adapt (<i>v.</i>)	to change to fit new conditions (p. 4)
carnivorous (<i>adj.</i>)	meat-eating (p. 11)
decomposition (<i>n.</i>)	the process of decaying and rotting (p. 5)
descended (<i>v.</i>)	developed from; have as ancestors (p. 8)
impressions (<i>n.</i>)	marks or prints made by pressure (p. 4)
meteorite (<i>n.</i>)	chunk of stone or metal that falls to Earth's surface from space (p. 14)
paleontologists (<i>n.</i>)	scientists who are experts in prehistoric life and fossils (p. 4)
rudimentary (<i>adj.</i>)	incompletely developed (p. 10)
species (<i>n.</i>)	group of organisms that share certain traits and can interbreed (p. 4)

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Reading a-z Running Record

Level Y

Student's Name _____ Date _____

Early Birds: Fossils
and Feathers
154 words

Have the student read out loud as you record. Assessed by _____

page	E = errors S-C = self-correction M = meaning S = structure V = visual	E	S-C	E			S-C		
				M	S	V	M	S	V
4	Introduction Most of the species of animals that have ever lived on Earth suffer extinction. When the conditions of the environment change, such as when the climate cools or the quantity of food decreases, a species may die out if it cannot adapt to the new conditions. Paleontologists have learned about a wide variety of such extinct organisms from fossils—evidence of prehistoric life preserved in rock or other material. Some fossils are simple marks that an animal produced while moving, such as footprints or trails left in the ground. Others are hollowed-out impressions of an animal's entire body made in rock. Still others are preserved remains of an animal's body, such as bones or shells. Fossils show how new kinds of species developed over eons. For example, scientists have discovered fossils that lead them to believe that birds developed from reptiles more than 150 million years ago; those reptiles may have been dinosaurs.								
Totals									

Accuracy Rate:

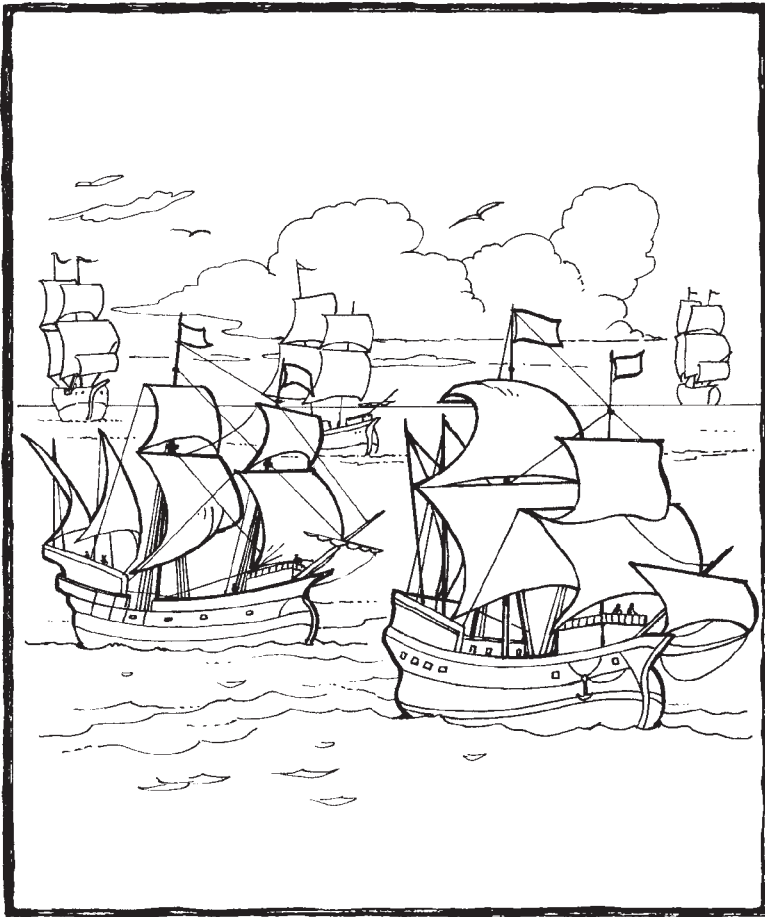
Error Rate:

Self-correction Rate:

Ships of Discovery

A Reading A-Z Level Y Leveled Reader

Word Count: 2,344



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Ships of Discovery

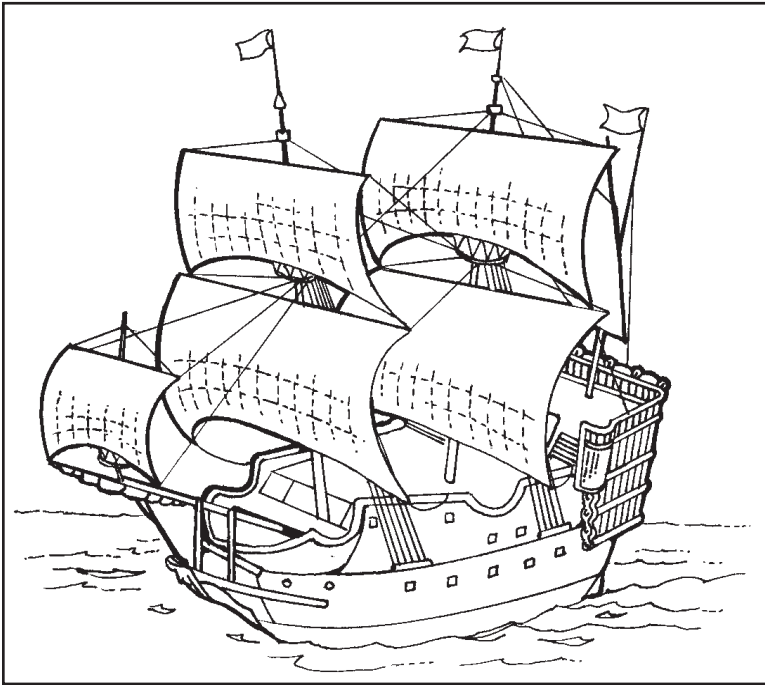


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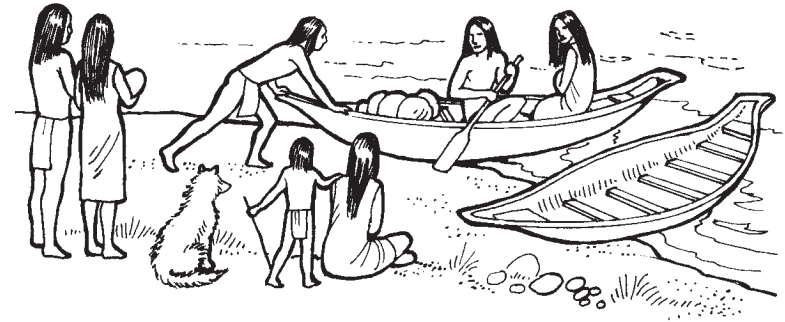
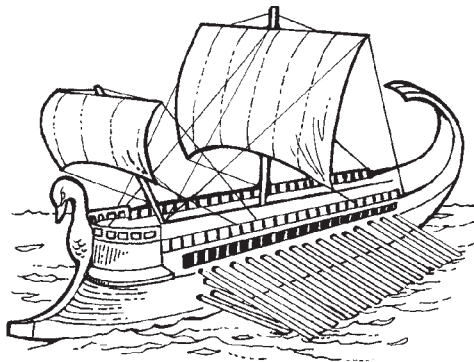
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Correlation

LEVEL Y	
Fountas & Pinnell	T
Reading Recovery	40
DRA	40

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Introduction

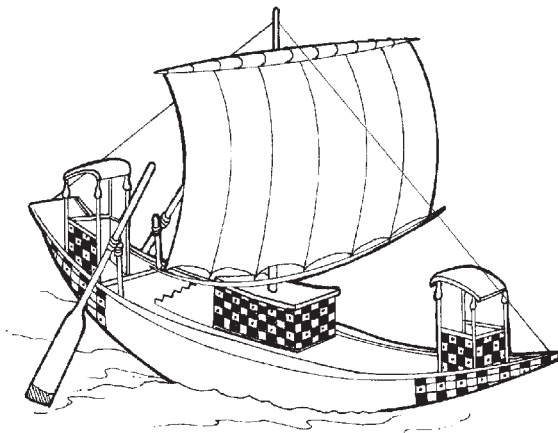
People often settle along rivers, lakes, and seas where they can find fresh water, nutrient-rich soil, and **bountiful** fishing. Long ago, people who lived near large bodies of water were curious about what might exist beyond the horizon. They also **speculated** that traveling over water might be easier than traveling over land. They noticed that particular materials, such as wood, reeds, or skins full of air, were **buoyant**. These thoughts led to the construction of the first simple boat.

As boats and ships became more practical, people were able to travel farther from home. Advancing technology created new types of boats that were often safer, faster, more comfortable, and able to carry more cargo. Boats became important tools for **commerce**, exploration, and defense. Let's examine how boats were used to explore the world and how they have changed over time.

Early Years

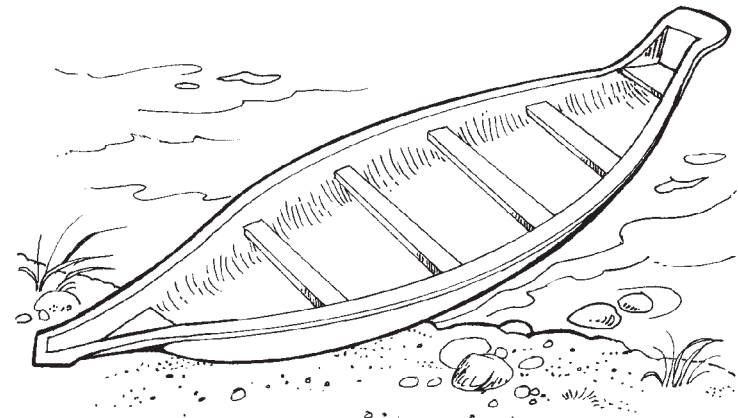
The oldest record of sea travel comes from Egypt. People might have been sailing the seas before them, but the Egyptians were the first to leave us records of their journeys. More than 6,000 years ago, the Egyptians took to the water and carved images of themselves doing so in stone. Since the mighty Nile River dictated much of ancient Egyptian life, it's not surprising that Egyptians mastered the art of traveling by water. Originally, they built simple boats by carving out the trunks of trees.

But the Egyptians were not the only people to make boats from trees. Far away in America, **indigenous** people were also building **dugout canoes** by hollowing out tree trunks. These were sturdy boats, but they couldn't carry much.



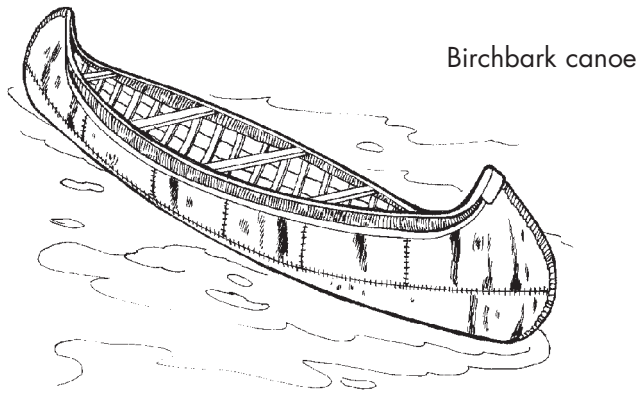
Egyptian boat

Over time, people wanted to transport larger cargoes over waterways. It became necessary to construct boats that could carry many people for long voyages, as well as food, animals, and other items to trade. Canoes carved from a single oak tree and steered with a pole were adequate boats for crossing a lake or going down a river. However, they didn't work well for carrying bulky objects. Imagine trying to row a narrow canoe across a wide lake with six sheep crammed around you. The space just wasn't sufficient.



Dugout canoe

Humans have always strived to perfect and upgrade their inventions. So it was natural that ancient people searched for methods to build bigger, faster, and safer boats. People realized that they needed better boats if they were going to explore places far from their homeland.



The next evolution in boat building was the use of wooden beams to make a frame. The frame was covered with wooden planks or bark from trees. Some cultures even used animal skins stretched over the frame to create a **hull** (the outer shell of a boat). These boats were bigger than previous designs, but were also more **streamlined** and able to hold more cargo. People also developed paddles and oars to move in deep water, where poles could not reach the bottom.

The Egyptians were the first people to cover wooden frames with long, flat pieces of wood to create hulls. Some of their boats measured as much as 21.3 meters (70 ft) long. The Egyptians were also the first to use sails to harness the power of the wind. The use of sails **eliminated** or reduced the need for people to row the boats. Some boats used both rowers and sails.

Soon, the Greeks, Phoenicians, and other peoples around the Mediterranean Sea were building large boats powered by sails. About 3,000 years ago, sailing ships were built with two masts, each one holding a sail. The addition of a second mast made a ship much easier to steer and also made it much faster.

Five hundred years later, the Greeks developed a ship with four sails. This ship was safe enough to leave the Mediterranean Sea and travel down the west African coast.

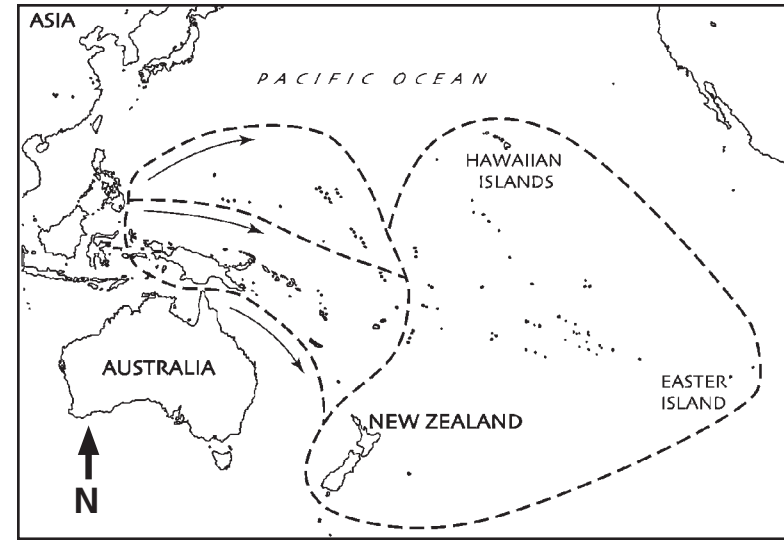
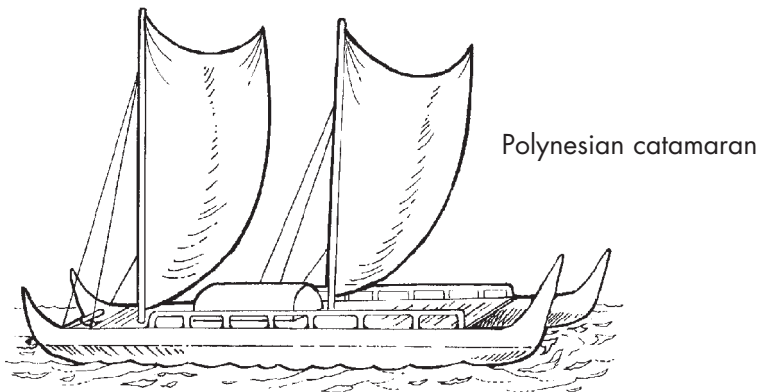
Some of the fastest ships at the time were built for battle. These warships often had as many as three levels of rowers on each side of the ship. Arranging the rowers above each other on separate **tiers** provided a great deal of power in a small amount of space. Greek ships with three tiers of rowers were called **triremes**.

These larger ships allowed people to travel to and explore distant places. During this period, exploration and trade moved beyond the Mediterranean Sea. Although ocean travel still had its dangers, it had become safe enough that some brave explorers and traders dared to risk it.

The Polynesians

In the South Pacific, groups of Pacific Island peoples were building boats that could sail in the open ocean. Over 3,500 years ago, these people were traveling east, well beyond the **archipelago** of islands where they lived. They also explored areas off the Asian mainland. More than a thousand years ago, these people made journeys of thousands of miles in open boats.

These Polynesian sailors built a type of boat that was an early version of the modern catamaran. They took two canoes and connected them using large wooden poles. A deck was then built to span the poles. These boats usually measured about 15 to 18 meters (50–60 ft) long. The central deck held masts for sails and had enough space for several people and their supplies for the duration of a lengthy voyage.



Routes of Polynesian expansion

These early boats provided safe travel from one island to another. The Polynesians settled many new islands they discovered. By AD 1000, they lived on nearly every **habitable** island they could find in the Pacific Ocean. Their new homes included Hawaii, New Zealand, and Easter Island.

The Polynesians were accomplished sailors. They became so familiar with the ocean that they could determine their location by the size and shape of the waves. They also knew how to navigate using the stars. They could easily travel great distances by going from island to island. The Polynesians grew to accept sea travel as a way of life.

The Vikings

More than 1,300 years ago, another group of people in another part of the world began to build larger boats. These people were the Vikings. They lived in the northern part of Europe. The Vikings were well known as warriors and conquerors. They were accustomed to traveling over water. By the year 700, they were sailing boats that were superior to any others on the ocean.

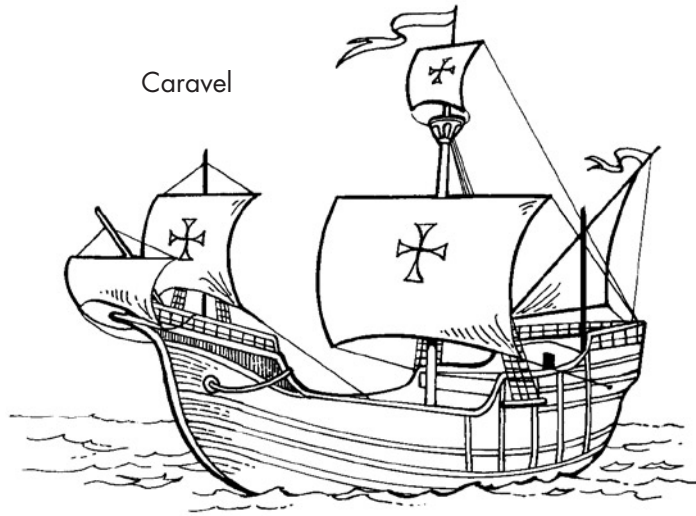
The boats they built, called knarrs, were used primarily for trading. These boats were up to 16.5 meters (54 ft) long and 4.5 meters (15 ft) wide.

Because they were flat bottomed, the knarr boats could carry extremely heavy loads, and they were wide enough to carry a large amount of cargo. They were also very stable and could travel safely across the open ocean.



At that time, most sailors did not like to lose sight of the coast, but the Vikings were fearless in their explorations. They used a wooden dial called a sun compass to help them navigate. Viking explorers were willing to travel into the unknown to claim new lands and seek adventure. They were also the first Europeans to visit North America.

The Vikings also built warships known as longships. It often was difficult to tell if a longship was coming or going because they looked the same in the front and in the back. Because of the design of their longships, Viking attackers could easily change direction. Longships were able to travel as fast as 15 knots. (A knot is a way to measure speed on water. One knot is a little faster than one mile per hour.) Some of the larger longships carried as many as 200 warriors. The combination of large, speedy, easy-to-handle ships and a fierce fighting spirit made the Vikings tough to defeat. The Vikings ruled the ocean for nearly three centuries. However, they did not improve on the design of the longship, and other nations eventually developed mightier ships.



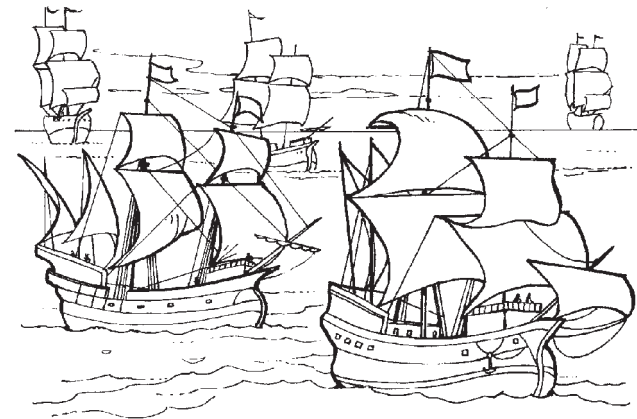
Age of Discovery

Until the 1400s, most sea explorers remained close to their home waters. But with the coming of the Age of Discovery, things changed dramatically. Every European sailing nation wanted to find new lands. The race was on, and the Americas were the prize.

Shipbuilders searched for ways to build faster and safer ships. In the 1400s and 1500s, Christopher Columbus and other explorers used small, swift, sturdy ships known as caravels. These ships had three masts to hold sails. This design made the ships faster and easier to steer. Caravels had square sails on the fore and main masts, and a triangular-shaped sail, called a lateen, on the mast at the rear of the ship.

The Santa Maria was the largest of Columbus's ships at 27.4 meters (90 ft) long and 9.1 meters (30 ft) wide. Compared to modern ocean liners and cargo ships, these ships were tiny. They didn't even have cabins where the crew could sleep at night. Sailors just had to lie down on the deck or in the hold.

But even though caravels were quite small, the famous explorer Ferdinand Magellan set out to sail five of these ships around the world with a crew of 260 sailors. Almost three years after they began the trip, Magellan's crew returned. Only one of the ships and eighteen of the sailors made it around the world. The other ships were lost at sea, and the other sailors died. Magellan was not one of the survivors. He was killed somewhere in the Philippine Islands.



Magellan's ships

The Chinese

While European explorers were sailing the world, the Chinese had also taken to the sea in another part of the world. By the 1400s, they were skilled sailors. Chinese people had long since invented the magnetic compass. They also invented the rudder a thousand years before Westerners. They used rectangular sails reinforced with strips of bamboo called battens. The battens made the sails sturdier and easier to furl and unfurl, and sailors could even climb them like ladders!

From 1405 to 1443, the most famous Chinese explorer, Zheng He, traveled on seven long voyages with a fleet of sixty-two treasure ships. The Chinese called these ships “junks.” Inside the hull, the ship was divided into many sections, partitioned off with watertight walls or bulkheads to minimize potential damage. If the hull were breached, the leak could only flood a small section of the ship, rather than sinking the entire ship.

Zheng He’s junks were much larger than European ships. His largest ship was so big that it could have held all three of Columbus’s ships on its deck. This massive ship was 121 meters (400 ft) long and 45.7 meters (150 ft) wide.

In addition to the sixty-two main trading ships, more than a hundred smaller support boats were in the fleet. The Chinese sailed all the way to Africa to trade as well as to show the might of the Chinese empire to the rest of the world. Zheng He even carried a giraffe home to the emperor.

War with their Asian neighbors caused the Chinese to turn their attention away from exploration. The emperor made ocean voyages illegal and had all the treasure ships destroyed. If the Chinese had continued their explorations, we might be studying how the Chinese discovered America. And North and South Americans might be speaking Chinese instead of French, English, Spanish, and Portuguese.



Chinese junk

Later Years

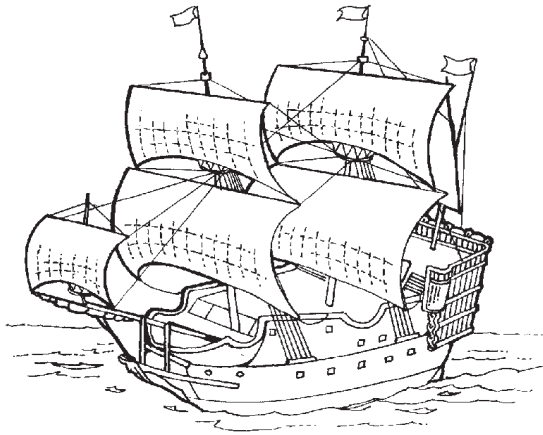
As sea exploration continued, the Spanish led the way. By the 1500s, European shipbuilding had experienced vast improvements.

The newest ships, called galleons, were larger, faster, and more comfortable.

It took two thousand oak trees to build one galleon.

These vessels were as long as 42.7 meters (140 ft), but were still small compared to the Chinese ships. Many of them had nice, comfortable living quarters, at least for the officers. Galleons were dual-purpose ships that served as both trading vessels and warships. Because of their great size, these warships were capable of mounting many cannons, making them dangerous in battle.

In the late 1700s, Captain James Cook began some of the greatest explorations of his time. In his first ship, *Endeavour*, Cook sailed around the world.



Galleon

While many previous explorers sailed to make war or find treasure, Cook was interested in knowledge and science. He brought three scientists with him when he traveled, one astronomer (a scientist who studies the night sky) and two naturalists (scientists who study plants and animals). He also took many artists to document their discoveries. Cook observed the stars as he sailed, and whenever he came to a new land, he learned as much as he could about its plants and animals. His work broadened the European understanding of the world.

Cook kept his crew healthy by making them eat foods such as limes and cabbages. Until Cook's time, up to one-half of the crew on a long voyage would die of **scurvy** or other diseases. Cook knew his success as an explorer depended on keeping his crew in good health. Soon, all British sailors knew that they needed to eat vitamin C to survive. Sadly, although Cook attempted to remain diplomatic and friendly wherever he went, he was killed in a fight in Hawaii in 1779.

Do You Know?

British sailors's use of limes to prevent scurvy led people of other nations to give them the nickname "limeys."

Conclusion

By the mid-1800s, sailors had explored and mapped most of the world's coastlines. Very fast sailing vessels called clipper ships carried people across oceans in a matter of days. One clipper, *Sir Lancelot*, set a record by sailing from Australia to England in three months. Some of these ships had as many as thirty-five sails, and they could travel even in light breezes.

By the 1870s, however, the steam engine largely replaced wind power. The industrial revolution swung into full gear, and machines became more significant to everyone. Bigger and faster ships than had ever been imagined suddenly became possible. Today, steam power is outdated, and ships run on different types of engines. Some submarines and aircraft carriers even run on nuclear power! Cruise ships carry thousands of people at a time like floating cities.

When we look at some of the ships used by early explorers to sail across oceans, we have to admire their courage and their **ingenuity**. Explorers and their ships of discovery helped create the world we live in.

Glossary

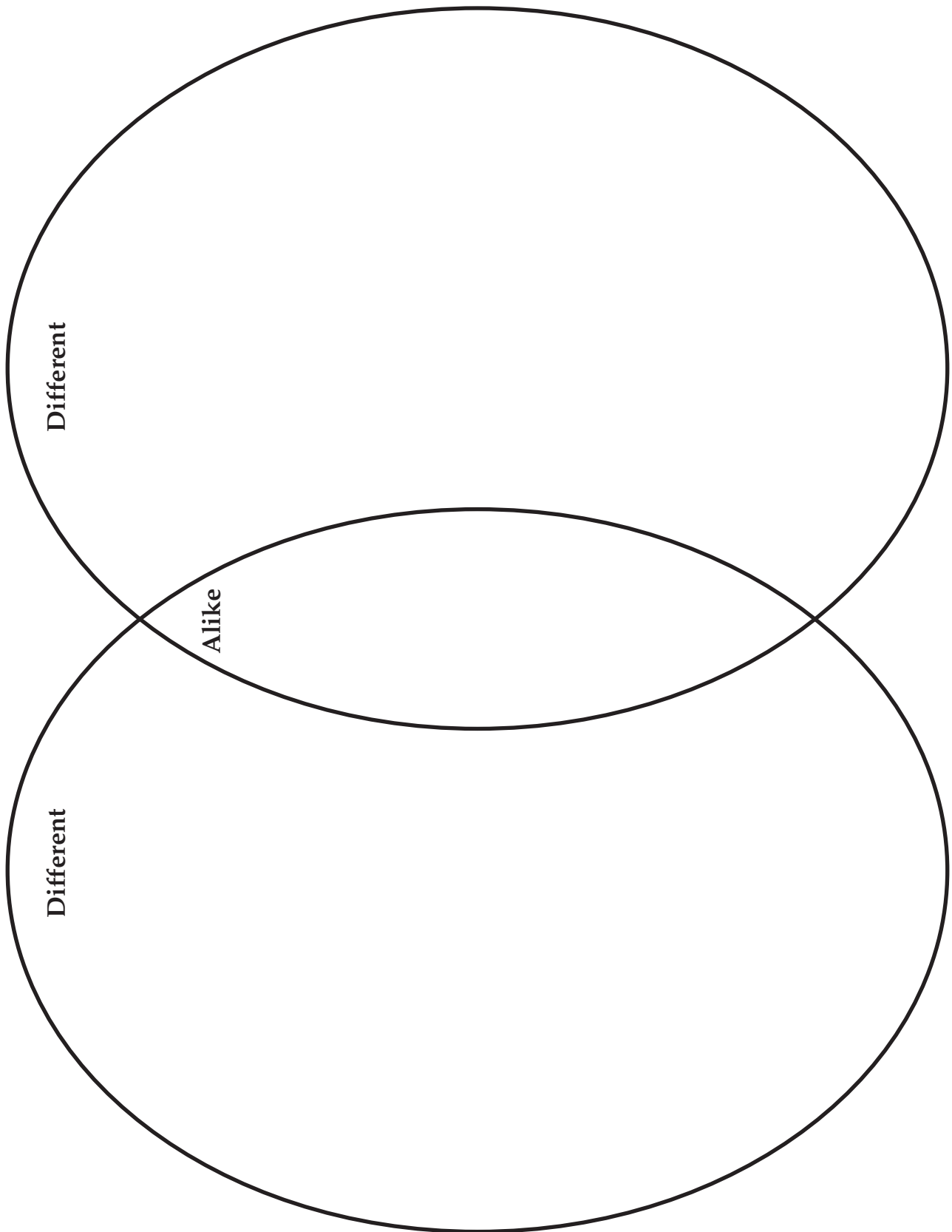
archipelago (<i>n.</i>)	a cluster or chain of islands (p. 9)
bountiful (<i>adj.</i>)	plentiful, abundant (p. 4)
buoyant (<i>adj.</i>)	able to float (p. 4)
commerce (<i>n.</i>)	the buying and selling of goods; business or trade (p. 4)
eliminated (<i>v.</i>)	removed or took away (p. 7)
habitable (<i>adj.</i>)	capable of supporting life (p. 10)
indigenous (<i>adj.</i>)	native to a particular place (p. 5)
ingenuity (<i>n.</i>)	cleverness or skill in solving a problem or challenge (p. 19)
scurvy (<i>n.</i>)	a life-threatening illness common to early sailors caused by a lack of vitamin C (p. 18)
speculated (<i>v.</i>)	guessed based on ideas and theories that were not definitely proven (p. 4)
streamlined (<i>adj.</i>)	designed to move easily through air or water (p. 7)
tiers (<i>n.</i>)	rows or levels arranged one above another (p. 8)
triremes (<i>n.</i>)	ancient galleys equipped with three banks of oars (p. 8)

Name _____

Instructions: Compare and contrast Spanish galleons and Chinese junks. Write in the two topics you are comparing on the lines below. Write the details that tell how the topics are different in the outer circles. Write details that tell how the topics are alike where the circles overlap.

Topic: _____

Topic: _____



Name _____

Instructions: Write a sentence for each of the following nouns. Include at least two adjectives to help describe the noun.

ship

water

sailor

world

mast

sails

cabbage

deck

lime

car

Name _____

PART 1 INSTRUCTIONS: Match words from the left-hand column with words from the right-hand column to create compound words found in *Ships of Discovery*. Then write the compound words you created on the lines below.

water

lined

home

where

stream

two

main

shaped

New

Islands

flat-

ships

North

land

some

Zealand

triangular-

ways

Philippine

land

sixty-

America

ship

bottomed

clipper

building

PART 2 INSTRUCTIONS: Think of other compound words you know, and write them in the box.

EXAMPLE: rainbow, birthday

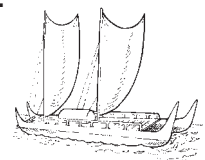


Plate Tectonics

A Reading A-Z Level Y Leveled Reader

Word Count: 1,933

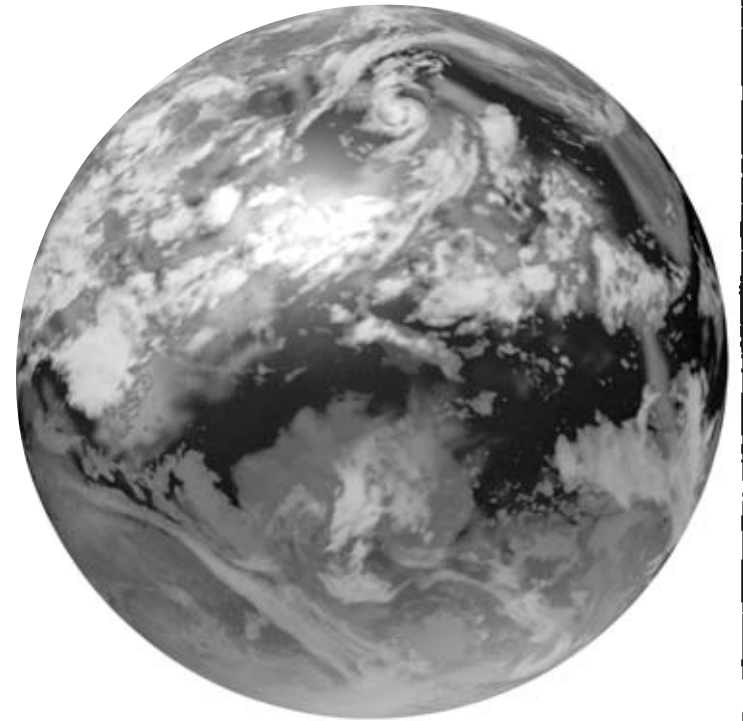


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Plate Tectonics



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Illustrated by Signe Nordin

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Correlation

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Introduction

When you look at a globe, do you ever wonder why the earth looks the way it does? Why are there big areas of land separated by oceans? Why isn't there just one large land mass? Why are there separate continents?

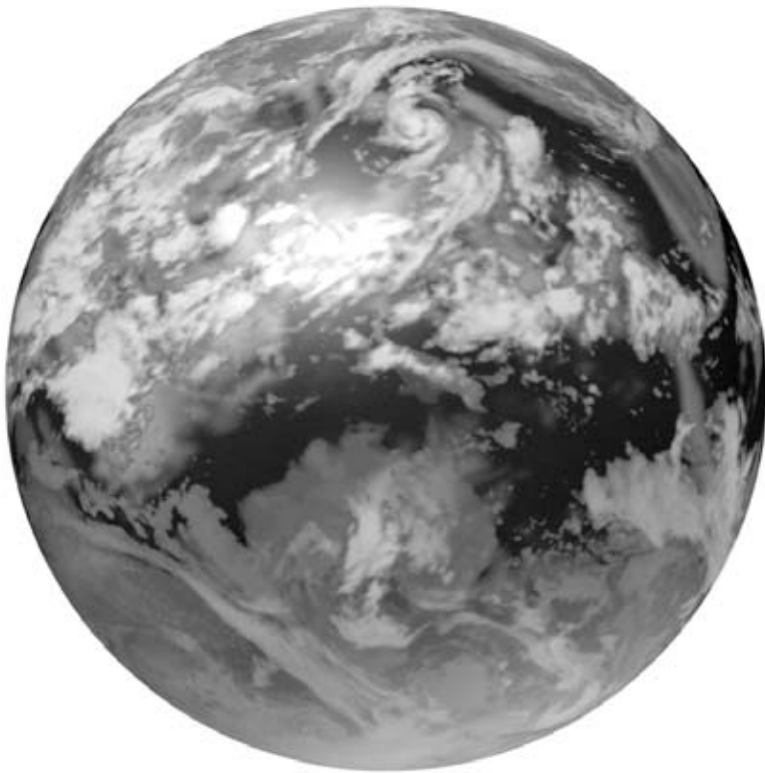
In this Leveled Reader, you will look for answers to these questions. You will learn about the earth's structure and how it has changed. You also will learn a little about how it may look in the future.

One thing you will certainly learn is that the earth is always changing. In fact, it's changing right now.

Before you learn about why the earth looks the way it does and how it changes, you will learn a little about how it is put together. If you can understand the way the earth is made, you will better understand how it changes.

Do You Know?

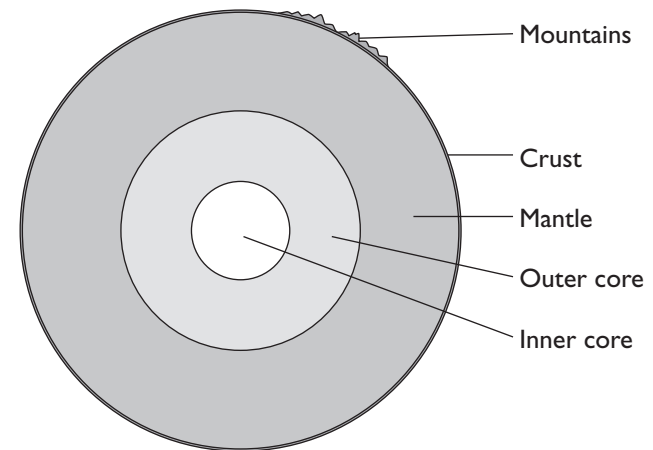
There is an earthquake every 11 seconds. There are more than 600 active volcanoes in the world. Each earthquake and volcanic eruption is part of Earth's way of changing.



The Earth's Structure

The size of the earth—about 12,249 kilometers (7,650 mi.) in diameter—has been known since the time of the ancient Greeks. But it wasn't until the early 1900s that scientists knew the earth was made up of three main layers: the crust, the mantle, and the core.

Internal Structure of the Earth



This picture shows the internal structure of the earth. The picture is drawn to scale (relative size of each layer, just much smaller). The **crust**, or outer layer, is very rigid and thin compared to the other two layers. Its thickness changes in different areas of the earth. Under the oceans, the crust is very thin, around 4.8 kilometers (3 mi.) thick. But under a mountain range, like the Swiss Alps or the Cascades in the northwestern United States, the crust can be as much 100 kilometers (62 mi.) thick. The earth's crust is brittle and can break when under great pressure.

Below the crust is the **mantle**. The mantle is a dense, hot layer of semi-solid rock that is about 2,800 kilometers (1,750 mi.) thick. It is semi-solid because the mantle is much hotter than the crust.

The pressure at the depths of the earth is much greater than at the surface. The pressure causes the mantle to be both hotter and denser at its deepest part.

Beneath the mantle and at the center of the earth is the **core**. The core is almost twice as dense as the mantle because the pressure is even greater in the core. The core is mostly metal, rather than rock like the mantle. The earth's center has two layers. The liquid outer core is about 2,080 kilometers (1,300 mi.) thick. There is also a solid inner core, the true center of the earth. The inner core is made almost entirely of iron. As the earth rotates, the liquid outer core spins. This spinning action creates the earth's magnetic field.

So, there is the thin outer crust, which is kind of stiff and can break. There is the middle layer, the mantle, which is much hotter and not quite solid. And in the middle is the core, which has a solid center and a liquid-like outer layer. Some people like to compare the earth to a hard-boiled egg. The crust is the shell, the mantle is the white, and the core is the yolk. You might want to use this comparison to help you remember the layers of the earth. But remember—unlike an egg yolk, the earth's core has two layers.

The Earth's Fragile Crust

When you think about the mantle, remember that it is very hot. When rock or metal is heated to high temperatures, it begins to get softer and turn to liquid. For example, when a blacksmith makes a horseshoe, he heats the metal until it turns red. When it gets that hot it becomes soft, and he can hammer it to fit the horse's hoof. Well, the mantle is always at a very hot temperature, so it is not quite solid. It's like Silly Putty[®] or Play-Doh[®]. It may feel solid, but if you push on it, it will change shape. This is how the mantle works.

The mantle is kind of solid, but not quite. It is stuck between the rigid crust of the earth's surface and the spinning, liquid outer core. Being caught in the middle causes stress to build up. The mantle is continually caught between two powerful forces. As a result, the mantle stays in constant motion.

Riding on top of the moving mantle is the crust. Most of the time, the crust is solid and stays in one piece. However, stress and pressure, which cause the mantle to move, can cause large slabs of the earth's crust to move, too. The pressure and motion can cause the crust to crack. The cracks, called **fault lines**, are where earthquakes are known to occur.

Fault lines are commonly found where large slabs of the earth's crust meet. You will learn about this movement in the next section.

If the pressure is great enough, enough heat is created to turn the mantle into a liquid called **magma**. The hot magma expands and places pressure on the crust above. The magma is pushed through cracks in the crust. In time it can get very close to the earth's surface. If the pressure is great enough, the magma will break through the surface and form a **volcano**. Sometimes the pressure is so great that the magma explodes through the crust, shooting dust, ash, steam, and liquid rock called **lava** into the air. Like earthquakes, volcanoes are usually found in areas where two or more slabs of the earth's crust meet.



Exploding lava

Tectonic Plates

The earth's crust is made of about 15 enormous slabs, or **plates**. Some of the plates are moving apart. Others are moving together. Still others are sliding past each other. The plates are located under both land masses and oceans. Those under land are called **continental plates**. Those under the oceans are called **oceanic plates**. Over time, one plate may disappear and another one may appear, so the number of plates can change. But the number won't change during your lifetime. It takes millions of years for these changes to happen.

The process of plates forming and moving is called **plate tectonics**. The word *tectonic* comes from a Greek word that means "to build." The phrase *plate tectonics* means that the earth is built from plates of rock. These plates probably formed very early in the earth's five-billion-year history.

A very long time ago, all the continental plates were joined as one large plate. There was only one continent at that time. We call that continent **Pangaea**, meaning "all lands" in Greek.

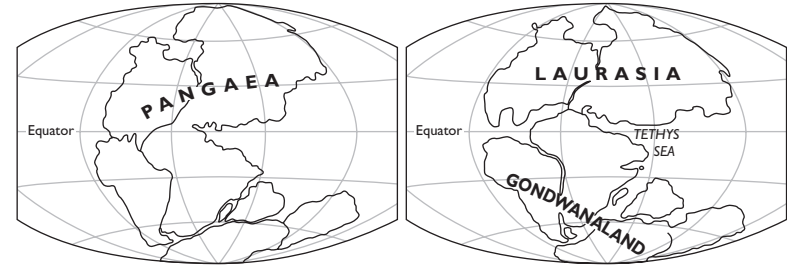
Pangaea

The illustrations on the next page show how the seven continents were one giant mass of land long ago. Over many hundreds of millions of years, forces within the earth have caused the continental plates to move and spread apart. The spreading plates have moved the continents to the locations we know today. As you move from one picture to the next, notice how the continents look like puzzle pieces. You can see how South America once fit right into the coast of Africa. Who knows how the continents might look hundreds of millions of years from now?

It has taken 225 million years for the continents to separate and move to their current locations. Some scientists believe most of the continents will someday be a single mass again. This movement of the continents over time is called **continental drift**.

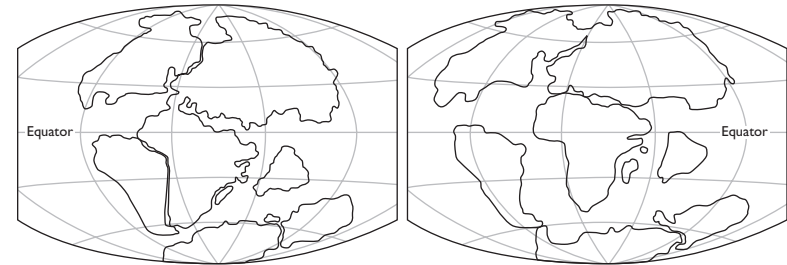
What forces in the earth could be powerful enough to cause huge plates of the crust to move?

Movement of Continental Plates



225 million years ago

200 million years ago



135 million years ago

65 million years ago



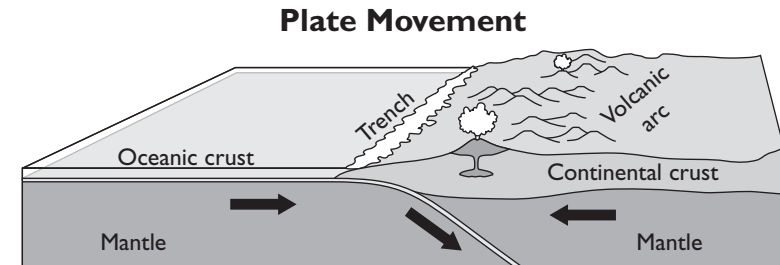
PRESENT DAY

Ocean Ridges and Trenches

In the middle of the Atlantic Ocean, scientists found a strange chain of mountains. Over the years, they found that this mountain chain exists between all the continents, winding its way around the earth. This mountain chain is called the **global mid-ocean ridge**. Along this ridge, hot magma seeps to the surface through fault lines in the crust. The magma spreads out along the ocean floor and cools. This buildup of magma causes the oceanic plates to change and grow. These plates push out toward the other plates. In some places along the ridge, underwater volcanic eruptions occur. Some of these eruptions have brought enough magma to the surface to form islands in the ocean. The island of Iceland formed in this way.

Around the Pacific Ocean is a series of deep **trenches**. Some of the older crust is pushed into these trenches as new crust is created. These trenches are places where one plate is pushed under another plate. Wherever this happens, there are lots of earthquakes and volcanoes. For this reason, the rim of land that surrounds the Pacific Ocean is called the **Ring of Fire**. The mountain ranges along the western shores of North and South America and the eastern shores of Asia were created when oceanic plates pushed beneath

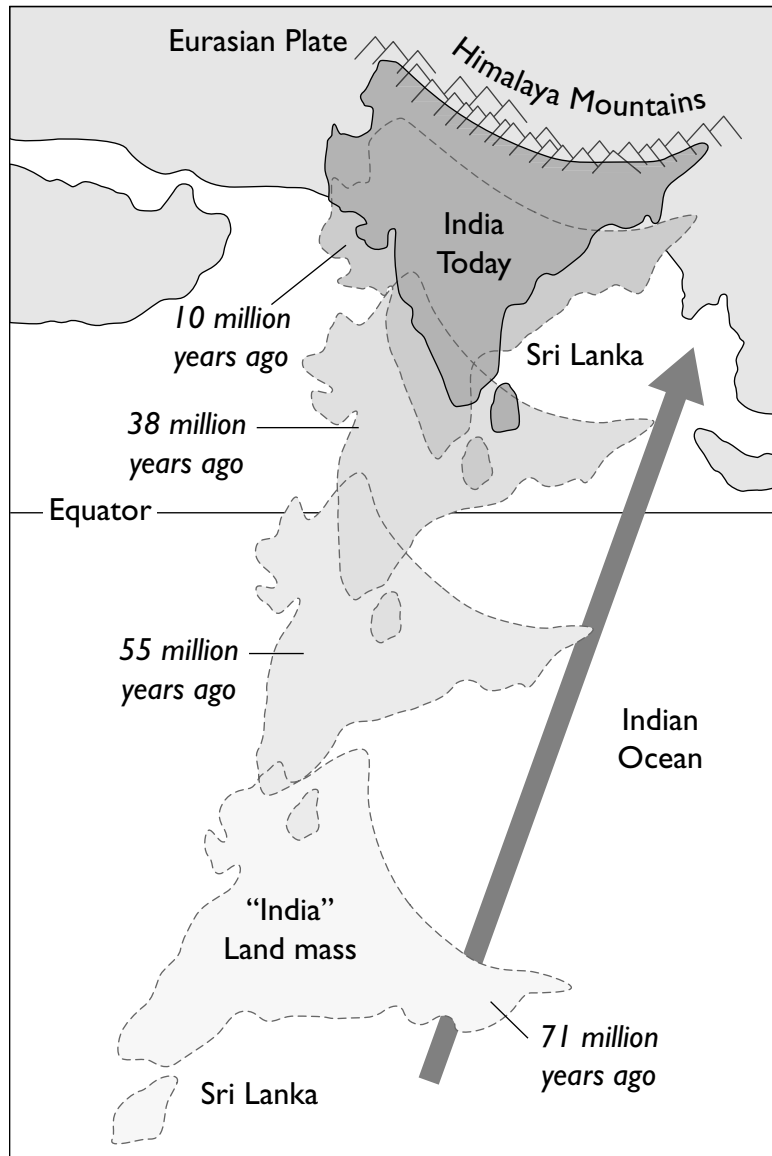
continental plates. These mountain ranges, which contain many volcanoes, were formed when the colliding plates pushed the crust upward.



An oceanic plate moves under a continental plate.

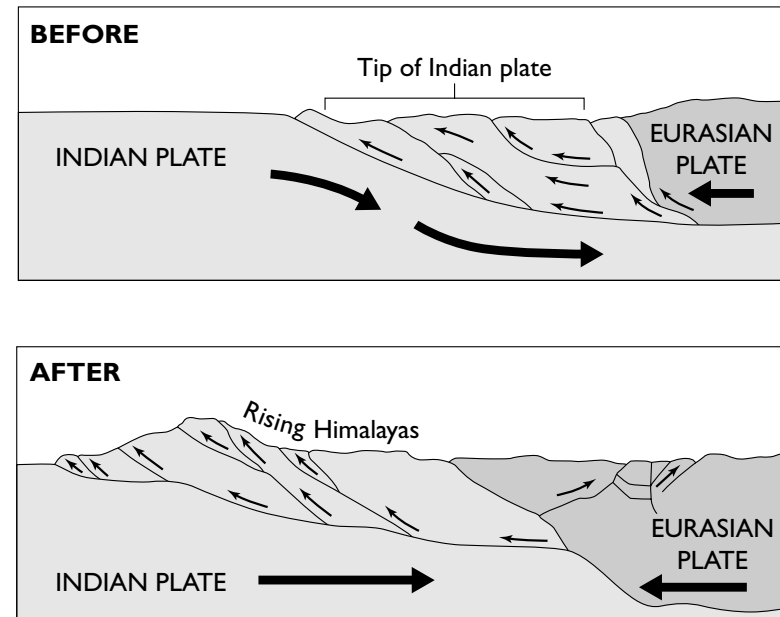
A similar process pushed India into the Asian continent millions of years ago. India was an island off the Australian coast when Pangaea broke up. Over a long period of time, India moved northward, at a rate of about 9.1 meters (30 ft.) per century. When it finally hit the Asian coast, it moved much more slowly but continued to move north. The northern movement of India pushed its coastal edge upward against the unmoving Eurasian continent. The coastal edge of India grew to become the Himalaya Mountains, the largest and tallest mountain range in the world. Some of the mountains are nearly 9.6 kilometers (6 mi.) tall and are still growing. Sandstone and other rocks found in the Himalayas contain fossils of water creatures, proving that the land was once under salt water.

This illustration shows how India has moved north over the last 80 million years.



These illustrations show how the tip of the Indian plate has been pushed upward to form the Himalayas by the pressures of the colliding plates. The Indian plate is still moving, causing the Himalayas to continue to grow.

Himalayan Mountain Formation



Do You Know?

The Himalaya Mountains continue to grow at a rate of 1 centimeter (.39 in.) a year. In a million years, that is 9.66 kilometers (6 mi.) of growth!

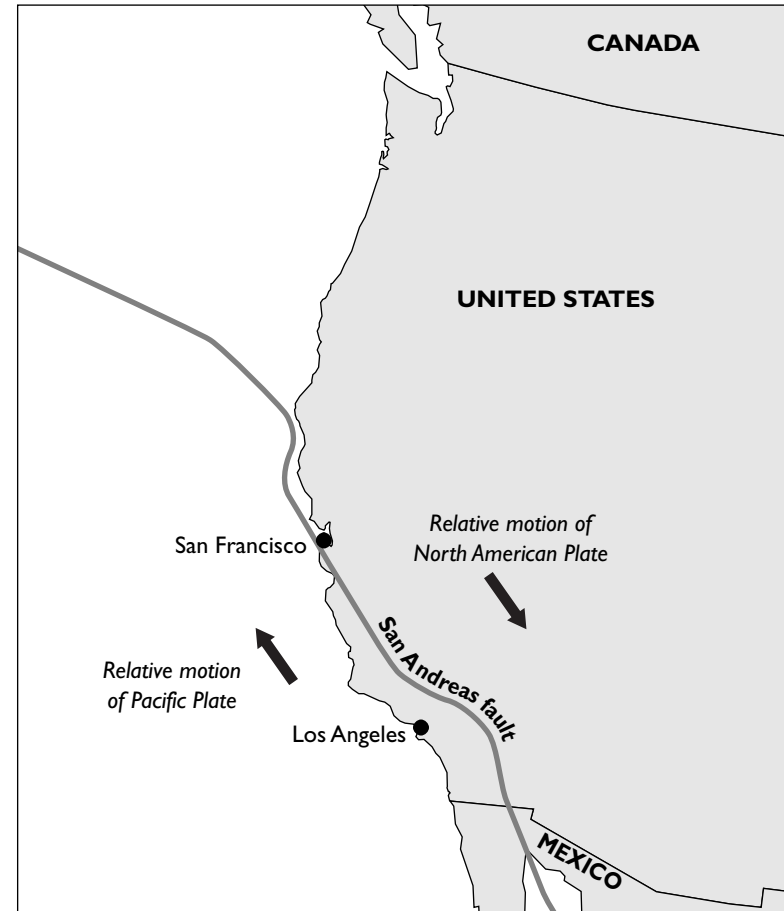
Conclusion

The study of plate tectonics tells us a lot about how the earth has changed over the years and how it will continue to change. Plate tectonics is still a new science. Over time it will offer many more insights into how the earth is made.

Throughout your lifetime, several major earthquakes and a few serious volcanic eruptions will occur. Each of these events will reveal information about how the earth is put together. It is now possible to track these changes on a daily basis. At the end of this Leveled Reader is a list of some books where you can learn more about how the earth changes. You will also find instructions for searching the Web for more information. Some Web sites keep track of earthquakes and volcanic eruptions around the world.

The study of plate tectonics teaches us a lot about the earth's past. It also can suggest the earth's possible future. For example, many scientists believe that Los Angeles will eventually be right next to San Francisco. Los Angeles is on an oceanic plate that is moving northward. San Francisco is safely on a continental plate and isn't moving. One day in the far future, Los Angeles may be in the area where Alaska is now.

Sliding Motion of Two Plates



This is an illustration of the movement of the Pacific Plate and the North American Plate. One day, Los Angeles will be next to San Francisco.

Wouldn't it be fun to live long enough to see this happen? Well, okay, that is a long time. But for the earth, it's just the blink of an eye.

Explore More

Books

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Gallant, Roy A. *Dance of the Continents*.

New York: Benchmark Books, 2000.

Knapp, Brian. *Earth Science. Volume 5, Plate*

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On the Web

❶ In the address window, type: *www.google.com*

❷ Then type: *plate tectonics*. Click on “Google Search.”

- Read the colored links. Click on one that looks interesting.
- When you want to explore other links, click the “back” arrow on the top left until you get back to the page with the links that Google found.
- Then try a search using other words from this Leveled Reader’s glossary, such as *Ring of Fire*, *Pangaea*, *continental drift*, and *volcanoes*.

For extra fun, go to *www.google.com*. Click on *Images* under the big word *Google* at the top. Then type in a word, such as *volcanoes*. Instead of links to sites, Google will show you images of volcanoes. You can click on each image to enlarge it. You can also follow the links on each image’s page to get to its Web site.

Google is just one of many search engines. Search engines are indexes of the World Wide Web that you can use to hunt for information. You may want to also try using other search engines, such as:

- Yahoo (*www.yahoo.com*)
- Alta Vista (*www.altavista.com*)
- Lycos (*www.lycos.com*)

Glossary

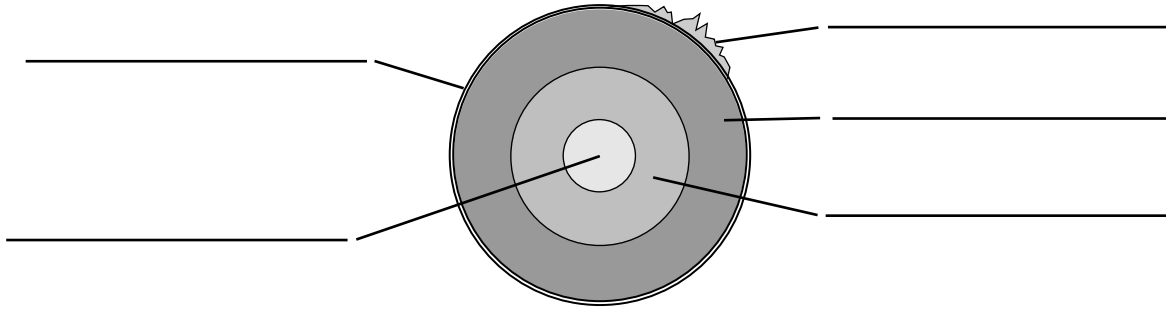
continental drift	the slow process of the earth's continents moving as the earth's plates shift (p. 11)
continental plates	plates in the earth's crust that hold the continents (p. 10)
core	the innermost layer of the earth, made up of a liquid outer core and a solid inner core (p. 7)
crust	the solid outer surface of the earth (p. 6)
fault lines	points at which the earth's crust cracks (p. 8)
global mid-ocean ridge	an underwater mountain range that zigzags between all the continents (p. 13)
lava	liquid rock that reaches the surface (p. 9)
magma	melted rock that rises from the mantle and lies beneath the surface (p. 9)
mantle	the semi-solid layer of the earth between the outer crust and the outer core (p. 6)

oceanic plates	the crustal plates located beneath the oceans (p. 10)
Pangaea	a single continent made up of all of the earth's land mass long ago (p. 10)
plate tectonics	the process of crustal plate movement (p. 10)
plates	the large slabs of rock that make up the earth's crust (p. 10)
Ring of Fire	the ring of volcanoes along the edges of the continents that border the Pacific Ocean (p. 13)
trenches	extremely deep areas where two plates meet and one slides under the other (p. 13)
volcano	a vent in a planet's crust from which molten or hot rock and steam come out; also, a hill or mountain made up of the material that comes out of the vent (p. 9)

Name _____

INSTRUCTIONS: Label the diagram of the Earth. Then answer the questions in your own words using complete sentences. You will need to summarize information gained from reading the text.

Internal Structure of the Earth



A. What are the main parts of the Earth's crust?

B. What are tectonic plates?

C. What is continental drift?

D. Name two important things about the Global Mid-Ocean Ridge.

E. What is the Ring of Fire?

Name _____

INSTRUCTIONS: Write as many synonyms and antonyms for these words as you can.

Synonyms

Antonyms

solid

like

stress

formed

looked

powerful

cools



Leaving Home

A Reading A-Z Level Y Leveled Reader

Word Count: 2,852



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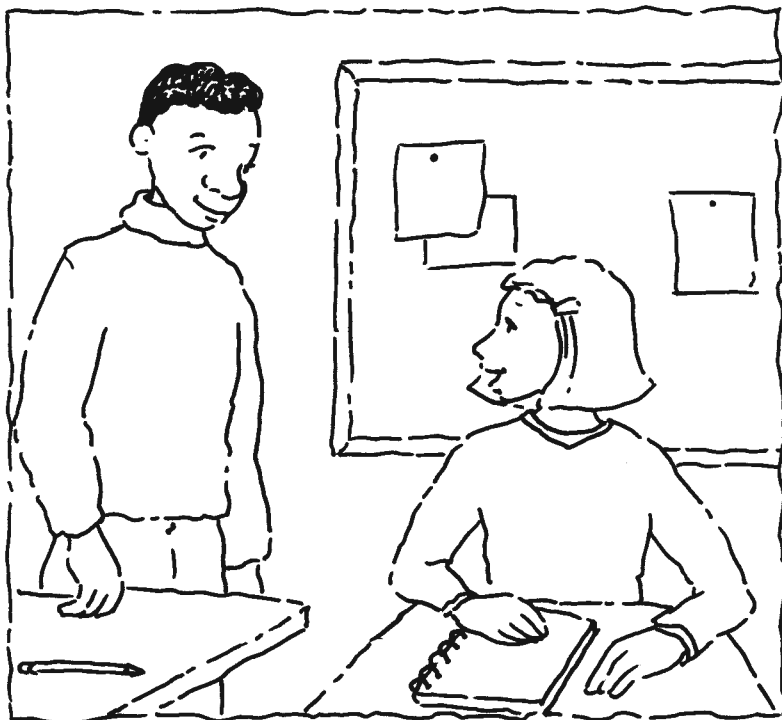
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Correlation

LEVEL Y	
Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A

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Chapter 1

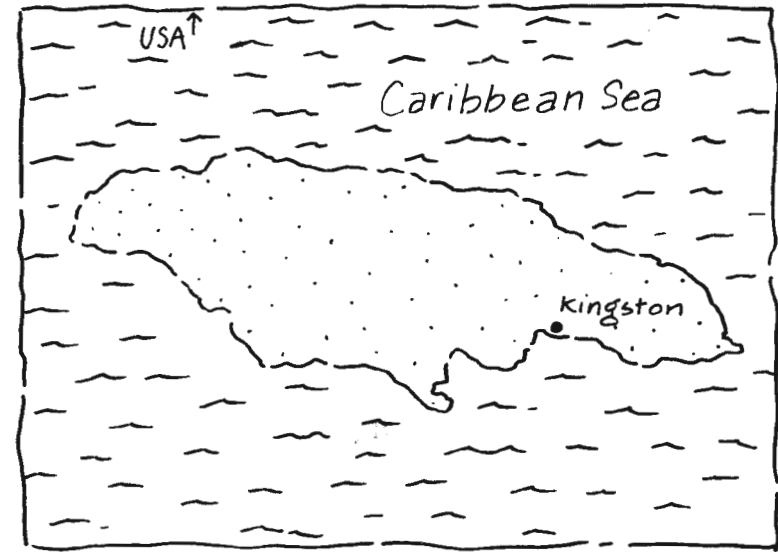
"Attention, class!" Mr. Tidewell commanded. "I would like to introduce our new student, Desmond Blake." All heads swung in my direction as I stood nervously in front of the entire classroom. "Desmond's family has just moved to Chicago all the way from Jamaica," Mr. Tidewell continued. "Let's give him a warm welcome on this cold February day."

"Wel-come, Des-mond," the class recited in a singsong tone. I felt uncomfortable and glanced out the window, avoiding the forty pairs of eyes staring back at me. It had been snowing **incessantly**, and I wondered if it would ever stop. Goose bumps rose on my arms in reaction to the cold, which I doubted I would ever get used to, and to this new situation I found myself in.

Normally, I loved being the center of attention. Back home I was always popular with my group of friends. But those were friends I'd grown up with, friends I hung out with every day. They knew all my **quirks** and faults, yet accepted me just the way I was. When I was with them, I felt comfortable and confident. I didn't have any of those feelings now as I stood in this strange room filled with strange faces.

I had never been in a situation like this before, and I didn't enjoy this new feeling of **detachment**. I wanted to run out, hop on an airplane, and head back to my old familiar classroom filled with my old familiar friends. But that wasn't ever going to happen again, and I had to blink hard to stop the tears before they started. I quickly made my way down the row of desks, ignoring the curious faces looking up at me, and sank deep into my seat and out of the spotlight.

My **reprieve** was short-lived, however, as Mr. Tidewell decided to take this opportunity to point out some facts about Jamaica. Why did Dad's job have to transfer him to Chicago? I groaned, aware that if I were back home, I wouldn't have to deal with all of this.



Chapter 2

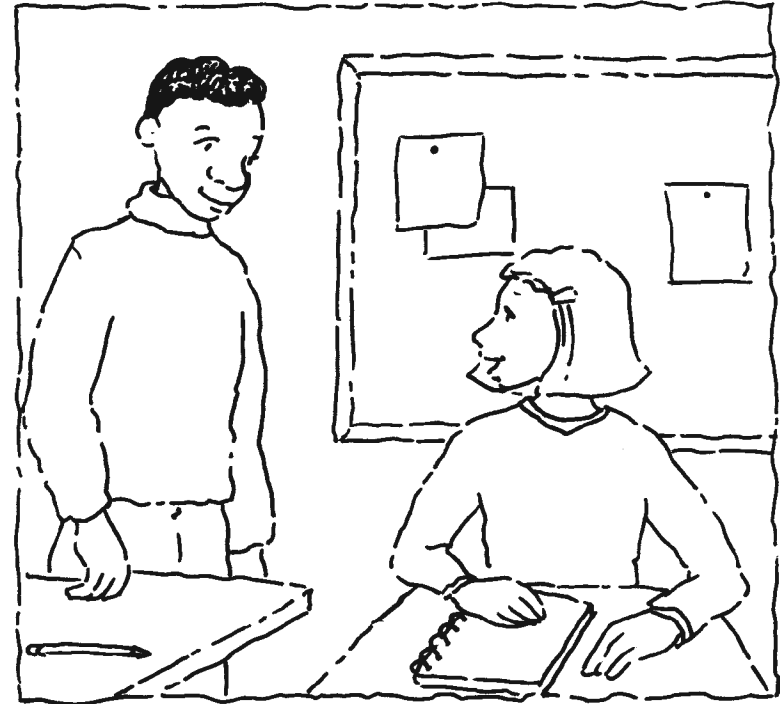
"Jamaica is the third largest island in the Caribbean," he began. "Does anyone know where that is?"

Mr. Tidewell paused and looked around the room for answers. No one responded. I imagined everyone was probably bored. After all, why would they want to learn about my home, anyway? I sank lower into my seat, hoping Mr. Tidewell would not call on me for the answer. To my relief, he didn't seem to mind that no one answered his question, and instead calmly continued to relate facts about my country to the class.

Every topic brought back memories. I soon slipped off into daydreams of sitting in class with my best friends, Tanya and Lee, all of us struggling to pay attention to our teacher as the warm tropical breeze and noises from the street wafted in through the open windows.

In contrast, there was no warmth in this classroom. The thick double-paned glass windows were shut tight against the snow, which covered the ground in a cold blanket of white. My thoughts drifted back to my life in Jamaica, where just a few weeks earlier I had been riding my bike home from school, the hot sun beating down on me as I pedaled through the neighborhood with my best friends.

“Desmond . . . Desmond!” Mr. Tidewell’s voice pulled me back to the cold, harsh reality of Chicago. Everyone was staring at me. “Will you tell us a little about what your school was like in Jamaica?” He invited me to stand and embarrass myself some more. I turned in my seat and noticed, for the first time, the girl who sat next to me. She smiled encouragingly. It was a small gesture, but it gave me the confidence I needed to pull myself up out of my chair and face the class as Mr. Tidewell asked the first question.



Chapter 3

“How many children were in your class, Desmond?”

I quickly answered, “Twenty-five.”

“And is school in Jamaica similar to or different from ours?” he inquired again.

There were so many differences that I could have spent the rest of the class explaining them all. But instead I chose to **gloss** over them without going into too much detail. I didn’t want the class to laugh at me when they heard that

I spoke differently from everyone else. Mr. Tidewell, who was originally from Georgia, pronounced words differently from everyone, and occasionally the class would snicker at his strange accent.

Mr. Tidewell noticed my hesitation and did not pressure me into answering. I thought he would let me sit back down, but instead, he asked if the class had any questions and left me standing there.

The room was completely silent. I shifted from my left foot to my right, feeling awkward and exposed. Finally, a small hand rose up next to me.

"What is the biggest difference between our schools and your schools back in Jamaica?" came a voice from next to me.

It was the nice girl who sat beside me. I found it easier to answer the question if I looked directly at her.

"To me, the biggest difference is that everyone wears a school uniform in Jamaica, whereas up here everyone wears normal clothes," I responded.

Comments flew around the classroom in reaction to my response.

"You mean everyone wore the same thing, every day?" a tall girl at the front of the class asked. She seemed absolutely shocked at such a thought.

"That's kinda cool," the boy beside her responded.

Another boy, seated behind me, snickered and said he thought people in Jamaica just wore grass skirts.

"Don't be stupid!" said another student, jumping in to put him down. "That's only in Hawaii."

"Settle down, class," Mr. Tidewell demanded. "Desmond, do all schools have the same uniform?" he asked.

"Oh, no," I responded quickly. "Each school has its own uniform and colors."

I held my breath and waited, but no one laughed or snickered at my accent. Mr. Tidewell had them under strict control, and as the next round of questions was raised, I continued to answer them all as best I could.

"What about sports?" a big, blonde boy shouted from the back of the classroom. "Did you play any sports in your school?"

A wide grin split across my face as I thought about my favorite sport.

"Back home I was captain of the school's cricket team," I revealed proudly and waited for the praise and admiration that usually followed such a statement. However, all I got was a bunch of puzzled stares.

"CRICKET?" "What's that?" The word hopped about the room.

"Isn't that a bug?" the girl beside me asked, her face scrunched in disgust. "Why would anyone want to be the captain of a team of crickets?"

What's cricket! I thought, absolutely **stupefied** that not one of them knew about the most perfect game in the world. I looked at the nameless strangers in my class and felt a strong need to tell them all about the game I loved so much. But I did not get the chance to share my knowledge. The bell rang, signaling the end of class and the start of lunch, and I immediately lost everyone's attention . . . just when I was starting to enjoy it.

Chapter 4

The class erupted into complete **mayhem** as everyone tried to exit at the same time through the single door at the front of the room, anxious to meet up with their friends and already discussing topics other than cricket. Within minutes, the chaos was over and I was left standing in the quiet classroom with Mr. Tidewell. "Thank you for sharing with us, Desmond," he said gratefully before hurrying out the door to eat with the others in the teachers' lounge. I slung my backpack over my shoulder and left the class alone, just as I had entered it earlier that morning.

The noise inside the cafeteria was deafening. There must have been at least a hundred students inside the enclosed room. I made my way through the lunch line, picking up a banana and orange juice, and settling for a cheeseburger. My favorite lunch in Jamaica was always a patty, and my mouth watered as I thought of the crisp, flaky pastry filled with **savory** ground beef.



The cheeseburger was a poor substitute for what had been my typical lunch for the past three years. At least the banana and orange juice were old favorites.

As I walked through the lunchroom, I recognized faces from my class, but they were too busy chatting with their friends to acknowledge me. And no one invited me to sit with them. They may have spoken to me in class, but it was an entirely different situation out here.

I sat at an empty table in the back of the room and tried to convince myself that it was better to eat alone, that everyone wasn't ignoring me. I took a huge bite out of my cheeseburger and chewed noisily. It's not too bad, I thought, and washed it down with some juice before returning to my **vigil** of staring out at the never-ending snow.

Someone called my name and I looked around to see that same girl with the encouraging smile.

"Hi, I'm Lori, and this is Matt," she said, pointing to the boy who had asked me about sports.

"Cricket sounds pretty cool. Do you think you could teach me?" asked Matt.

We both looked out the window at the continually falling snow. "Well, maybe in the spring," Matt grinned.

"You mean it's actually going to stop snowing sometime?" I asked hopefully, and we all shared a laugh.

I forgot all about my mediocre lunch as Matt asked endless questions about cricket, and I was glad to share my vast knowledge of the game.

"Why did your family leave Jamaica?" interrupted Lori, abruptly trying to change the subject. "I'm bored with all this talk about cricket."

Although I would much rather talk about cricket, I found myself responding to her question. Before I knew it, I had told them about my dad's job and how he got transferred to the office branch here in Chicago, and about my friends that I'd left behind.

"That must have been tough," Matt sympathized.

"It must be hard coming to a new school and a new country at the same time," Lori commented. "But what do you think of Chicago?"

"It's way too cold." I said immediately. "I've never seen snow before, and I had no idea it could be so cold."

They laughed at me.

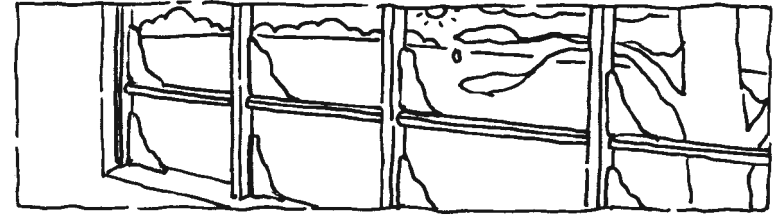
"Hey, I'm used to tropical temperatures where it rarely drops below 70 degrees," I protested. "I've never worn so many clothes at the same time," I continued, "and I can't tell you how weird it feels having this thing wrapped around my neck." I tugged at the turtleneck collar that had been choking me all morning.

"You'll eventually get used to it," Matt promised, but I didn't believe him.

"Winter is great for making snow angels and ice skating," Lori said, naming some of her favorite winter hobbies.

"And ice hockey," Matt added.

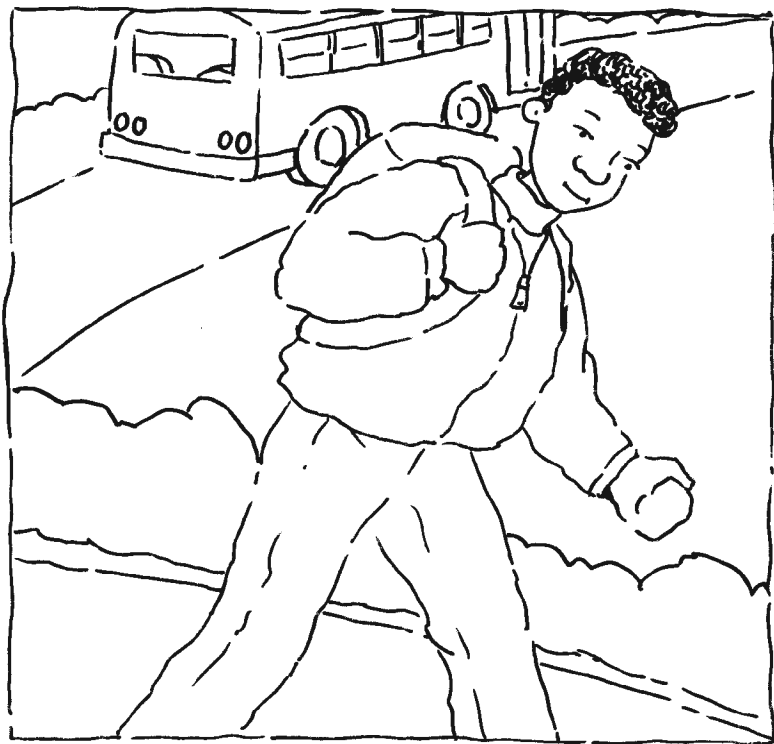
I had no idea what snow angels were, but ice hockey sounded like a lot of fun. Maybe Matt was right and I would start to enjoy this weather. Things change, after all. I had started lunch by myself, and now here I was heading back to class with two new friends.



Chapter 5

A couple of boys made snide comments when I entered the room, but Lori snapped back at them immediately. I sat down and looked around at faces that were becoming familiar. A few of my classmates came over and introduced themselves. Some shared quick stories about when their families immigrated to America and how they had adjusted to the changes. I found it very encouraging to know that others had shared similar experiences and that they had adapted well to the new school system.

Mr. Tidewell asked us all to settle down, and everyone scurried back to their desks to start the afternoon class. It was math—not my best subject—and from the looks on most of the faces in the room, I gathered it wasn't a popular subject with anyone else either. I glanced out the window. It had stopped snowing and the sun had come out, reflecting brightly off the snow-laden trees. Things were starting to warm up. Soon, the school day ended, and it was time to go home.



Chapter 6

I stepped off the school bus and carefully walked the block to our house. I'd slipped and fallen the day before as I ran to get out of the cold, but somehow it didn't seem as cold today.

I slammed the door shut and began the process of removing all the layers of winter clothes. "Desmond, please don't slam the door when you come into the house," Mom yelled from the kitchen.

"Sorry, Mom," I apologized, struggling out of my tall boots.

I walked through the living room and made my way back toward the wonderful aromas coming from the kitchen. Mom had done a great job making our home in Chicago seem a lot like the one we had left behind. Our furniture from Jamaica was in all the rooms, native paintings **adorned** the walls, and colorful rugs lay on the floor. Mom had even painted the rooms in tropical colors, and when reggae music played on the stereo, I felt as though I were back in Jamaica.

"Hi, Mom," I said as I poked around the kitchen, lifting the lids off bubbling pots to sneak a taste before dinner.

I grabbed a Ting from the fridge, my favorite grapefruit soda from home, and took it up to my room. Turning on my computer, I instant-messaged both Tanya and Lee, eager to fill them in on my day and hear the latest news from back home.

They couldn't imagine how cold it was, so I told them to stick their hands in the freezer for ten minutes. Lee was interested in ice hockey, and I promised to keep him up to date on whatever I learned about the new sport.

Tanya whined that the cricket team just wasn't the same without me. It felt good to be missed, and I told her that I was thinking about starting a new cricket team up here. A couple of the kids at school seemed interested in learning the game.

We went back and forth, each asking questions. Coincidentally, they asked the same questions the kids at school had asked, wanting to know what the main differences were. Tanya was instantly jealous that I got to wear normal clothes to school every day.

Finally, I told them about Lori and Matt and how I hoped we would become best friends. Lee teased me about Lori, as I knew he would, but Tanya was more concerned that they would replace her and Lee as my new best friends. I knew no one could ever replace Tanya and Lee, but I also knew that I wouldn't be seeing them a lot anymore, so we made a promise to talk every day.



Chapter 7

Headlights beamed through my bedroom window, alerting me that Dad was home, and I hadn't set the table for dinner. I raced into the dining room as Dad came in, grumbling about the darn snow and ice.

"Oh, George, you complained about the traffic and terrible roads when we were back in Jamaica," Mom reminded him.

"Yes, but at least it was warmer there," he laughed, and we nodded in agreement.

As I placed the old, familiar plates and silverware on the table, I thought about the

changes we each had to adjust to. Dad said his biggest difficulty was adjusting to driving in the snow. He admitted it was harder than getting used to driving on the right-hand side of the road. In Jamaica we drive on the left-hand side of the road. Last week, he crashed into the garage door after hitting a patch of ice in our driveway. Mom's biggest adjustment was that she no longer went out to work. She had set up her office at home and corresponded with her clients in Jamaica over the Internet. And my biggest challenge was getting used to the new school system.

All of us had left behind friends and family. But when we sat down to dinner and talked about our day, we always spoke in "**patois**," the Jamaican dialect. It felt good to hear and use familiar words and phrases. And even though our accents were much more pronounced, no one laughed or asked us to repeat ourselves. We could relax and be ourselves in our warm, colorful house, listening to songs from back home and eating the food we grew up with. It was a very comforting feeling to know that although we were thousands of miles from home, no matter what changes we faced in the future, we still had our culture to support us.

Glossary

adorned	dressed in or decorated with (p. 18)
detachment	an emotional, physical, or mental separation (p. 5)
gloss	a loose definition or a brief explanation (p. 8)
incessantly	without stopping (p. 4)
laden	covered in or weighed down with something (p. 16)
mayhem	destructive acts or chaos (p. 12)
patois	the dialect (regional type of speech) used in Jamaica (p. 21)
quirks	small personality traits or characteristics (p. 5)
reprieve	a short period of relief (p. 5)
savory	pleasantly flavored, salty (p. 12)
stupefied	emotionally or mentally stunned (p. 11)
vigil	a careful watch over someone or something (p. 13)

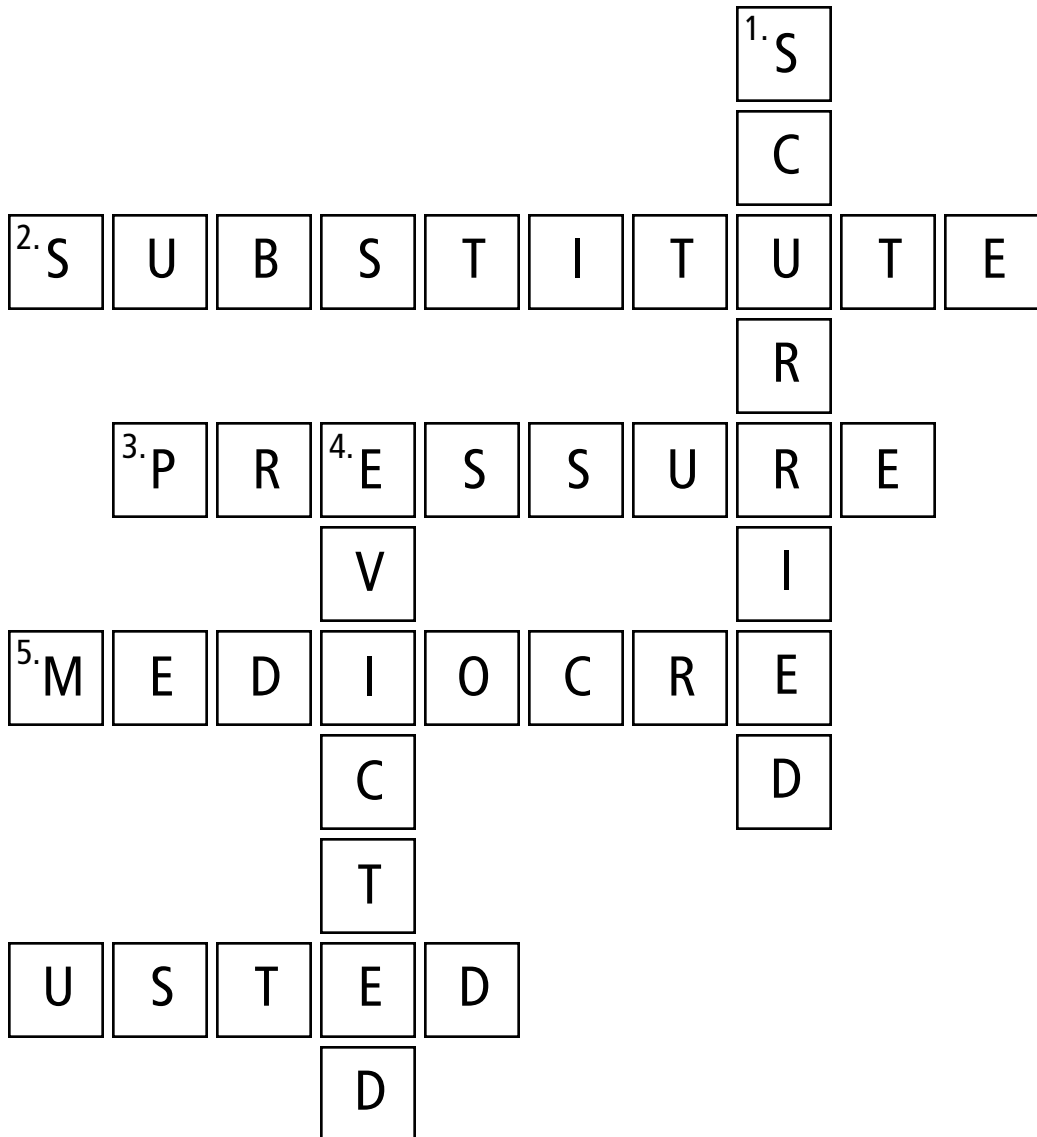
Name _____

INSTRUCTIONS: Fill out the emotion map chain below for Desmond. In each space marked "action," write down an action by a character in *Leaving Home* that affects Desmond. In the spaces marked "emotion," write down what Desmond feels in response to each action. In the spaces marked "reaction," write down how Desmond acts in response to his feelings.

Action Mr. Tidewell introduces Desmond to a new, unfamiliar class in a new country	→	Emotion	→	Reaction
				↓
Reaction	←	Emotion	←	Action
↓				
Action	→	Emotion	→	Reaction

Name _____

INSTRUCTIONS: The crossword puzzle below has already been solved. Write your own clues for each of the words by writing the definitions of the words on the lines below.

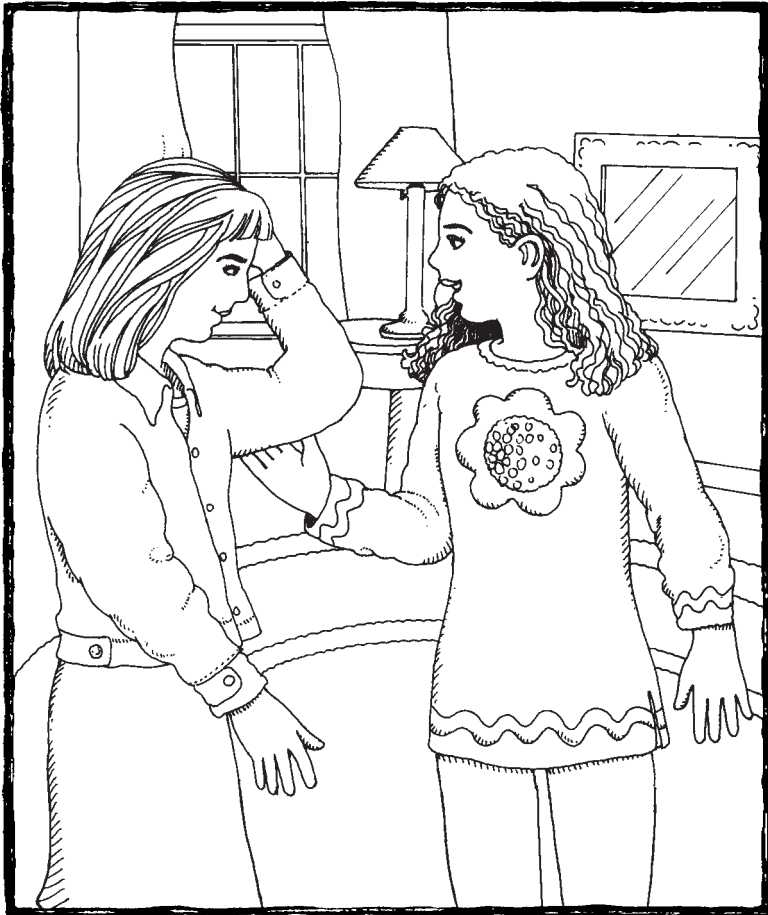


1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

The Mystery Twin

A Reading A-Z Level Y Leveled Reader

Word Count: 2,190




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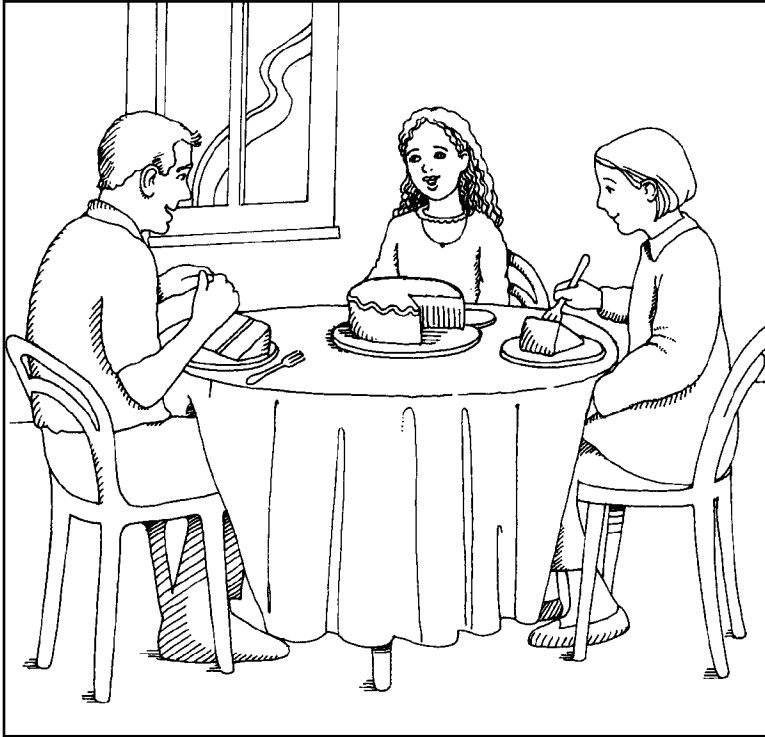
The Mystery Twin



Written by Rachel Kamb
Illustrated by Darcy Tom

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The Mystery Twin
Level Y Leveled Reader
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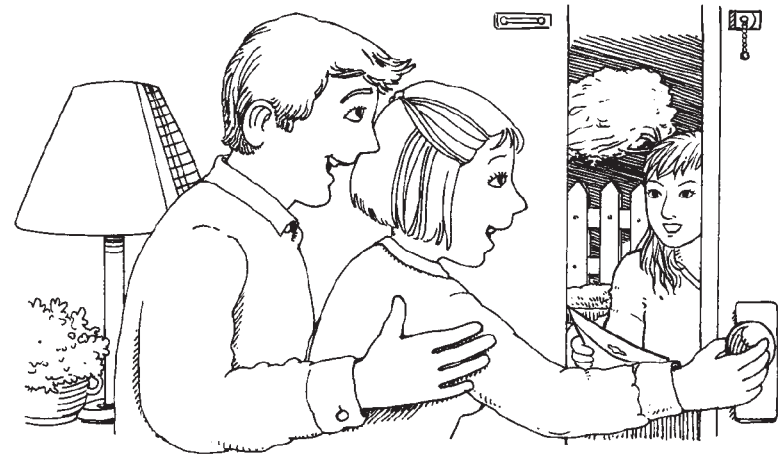
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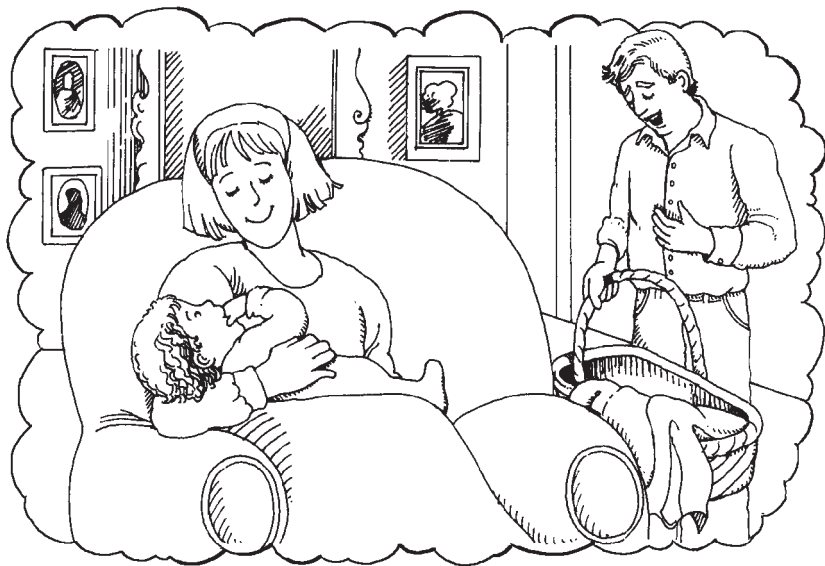
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The Note

One dark and **blustery** night, Theresa Alto was securing the windows against a storm when she heard a rapid banging on the door. At first she assumed it was just the wind, but then it came again. She cautiously opened the door, keeping the chain fastened, for the Altos weren't expecting any visitors on a night like this. It was Mrs. Banks from the private adoption agency.

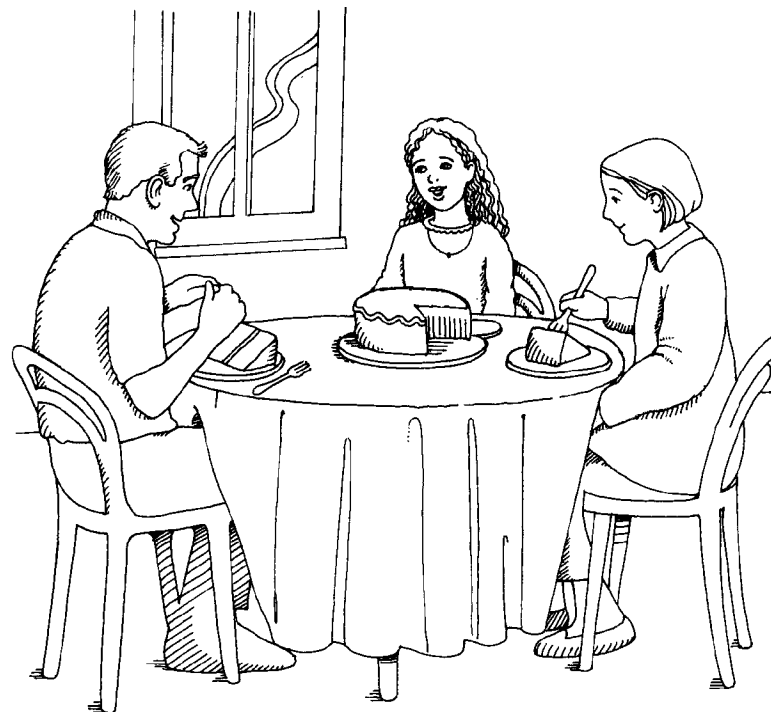
"I'm so sorry to disturb you on such a night," said Mrs. Banks. "But the agency is moving. When we moved a file cabinet, a note and photograph fell from behind it. It's about Heather. I thought you'd want to see it right away."





Thirteen years ago, Brad and Theresa Alto had adopted a beautiful baby girl. They had named her Heather after Theresa's favorite flower. Theresa placed her arm around Brad's, worried about what the note might say.

Mrs. Banks continued, "The note explains that the baby you adopted is a twin. The birth mother thought there might be a better chance for the babies to be adopted if they were separated. She had to make a difficult decision after the car accident that killed the babies' father. She also included a photograph of the two of them in happier times. I thought it would be comforting for you to have the photograph, and exciting for Heather to know that she has a twin."



Telling Heather

After Mrs. Banks left, the Altos called Heather into the dining room and sat her down. As they ate dessert, Mrs. Alto started telling the story of Heather's adoption.

Heather interrupted, "You know I am really glad you are my parents, but really, do I have to hear this story all the time? I could **recite** it by heart!"

Mrs. Alto gazed lovingly at her thirteen-year-old daughter and sighed, and then glanced quickly at her husband. "I know, dear, but now that you're thirteen and such a grown-up young lady, there's something else we need to tell you. We didn't tell you before, because we just found out."

"What is it? Is something wrong?" asked Heather.

Her parents exchanged cautious looks, and then Mr. Alto began, "Dear, we love you very much."

"Yes, and . . . ?" said Heather, growing more and more impatient.

"Well, you have a twin," Mr. Alto stated.

Heather sat stunned for a moment. "Really, a twin? You mean, I'm not an only child? Oh, you know how much I've always wanted a *sister*. This is the best news ever! Where is she?"

"Well," Mrs. Alto began, "your birth mother was afraid that if she left one family with twins, they might reject one or both of you, so she thought it best to separate you. The adoption agency can't tell us where your twin is, but Mrs. Banks did leave us this photograph of your birth parents and a note."

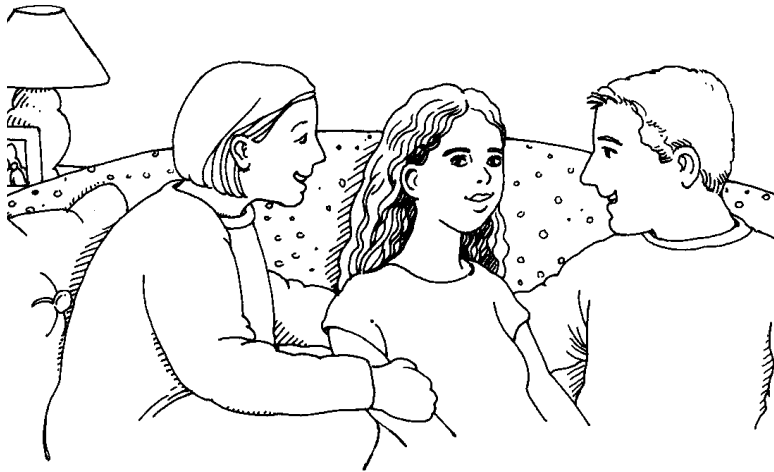


Heather stared at the photograph. "Wow," she whispered, dumbfounded, "I kind of look like them, don't I? I guess I understand why they thought they had to separate us, but how will I ever know where my twin is? I'd hate to think I have a sister out there who I'll never know. Will you help me find her?"

"Of course, dear, we'll do everything we possibly can," Mrs. Alto promised. "But you know, your twin could be a brother as well as a sister."

"Oh, a brother, that would be okay too—just as long as it is a **sibling!**" exclaimed Heather.

"Why don't we place an ad in the paper?" Mr. Alto suggested. "Or maybe in a couple of papers, and some magazines, too."



"Great idea," agreed Mrs. Alto. "In the meantime, we should think about how we're going to determine whether or not someone is actually related to Heather. Heather, why don't you come up with a list of things you think that you and a sibling might have in common."

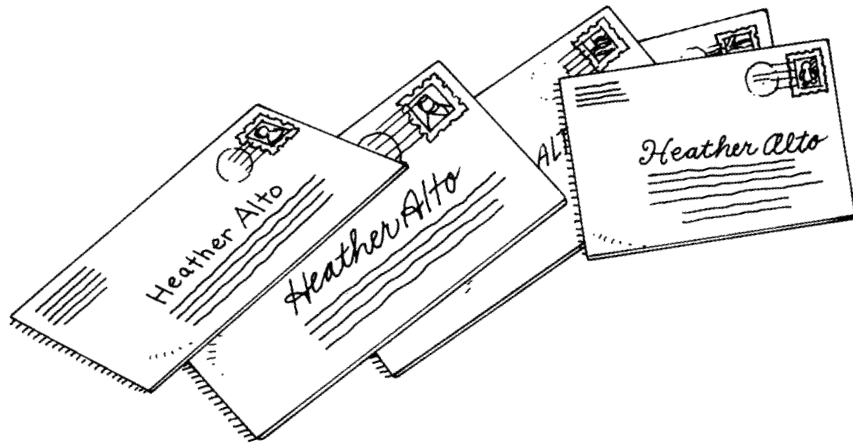
Heather jumped up. "I'll get started right away. Thank you both so much!"

The Search

While Heather began to work on her list, Mr. and Mrs. Alto prepared an ad for several local and national newspapers and magazines. They were sure to include the exact date that Heather was born and a summary of the contents of the note that was left. The ad asked that anyone who could possibly be the missing twin to contact them immediately, and to send a photograph.



They waited and waited as responses began trickling in over the next few weeks. Most were just letters of support from people describing their own adoption and lost-sibling stories, but a few offered information that helped the Altos.



The Altos were finally able to narrow down the responses to three candidates, all of whom were the same age as Heather and had similar birth and adoption dates. All of them had come from the same adoption agency. The Altos contacted each of the families and set up interview times for the following week. Heather finished her list and got ready to finally meet her twin.

The Interviews

Heather apprehensively reread her list while she waited for the first candidate to arrive. The list read:

Things about myself:

I have long, curly brown hair.

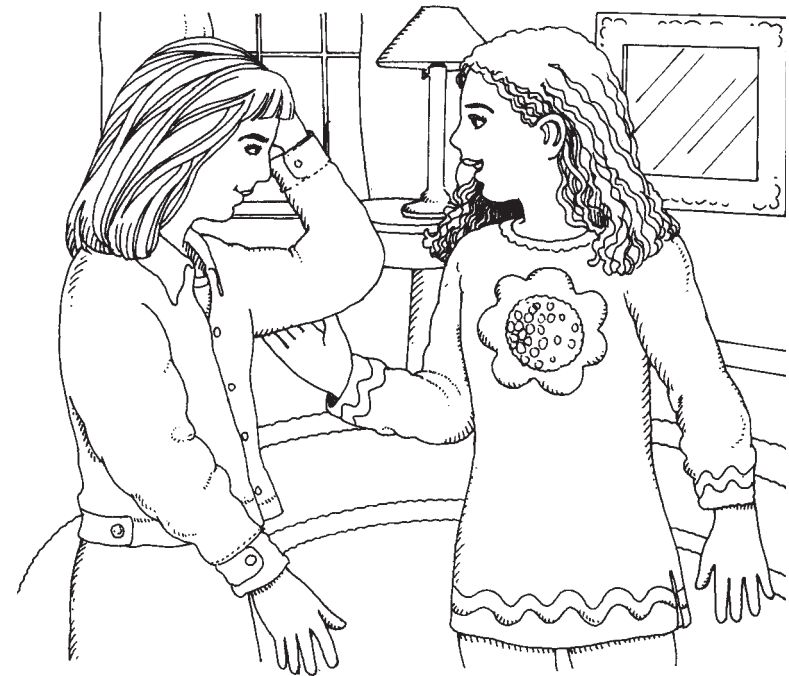
I have brown eyes.

I like to play chess.

I like cats better than dogs.

I love peanut butter.

I have attached earlobes.



Amelia skipped through the door. "I'm so excited you chose me to come see you, Heather! You know, I've always had the feeling that I had a sister, and when I read your ad, I almost fell out of my seat. I'm sure we're sisters, I can just sense it; I know you and I are twins!"

Amelia obviously wanted to be chosen as the missing twin. She gave very elaborate answers to Heather's questions, giving all the information she needed and more. The Altos were wary; they didn't want to think Heather's twin was the first candidate just because she was energetic. They wrote down Amelia's responses to Heather's questions.

Amelia:

She has long, straight brown hair with light streaks in it.

She says she has hazel eyes, but they look sort of brown.

She doesn't know how to play chess.

She likes cats, but she has a ferret and likes him better than either dogs or cats.

She's allergic to peanut butter, so she doesn't eat it.

Her earlobes are not attached.



The next to arrive was Harry, a thirteen-year-old boy with brown eyes and short, dark hair. Harry was soft-spoken and polite, and said he had read the ad in the local paper and lived just a few neighborhoods away. He answered all the questions very **concisely**, and seemed like a nice boy, just a little on the shy side, especially when compared to Amelia.

Harry:

He has short, curly, dark brown hair.

He has brown eyes.

He likes chess.

He doesn't like cats.

Peanut butter is not his favorite food.

His earlobes are attached.

The final candidate was a very pleasant girl named Casey. She was also thirteen and had long, curly brown hair, brown eyes, and a nice smile. She chatted with the Altos, seeming very comfortable with the entire family. She even stayed for a while after the interview to talk about chess and school. After she left, the Altos listed her responses next to the others’.

Casey:

She has long, curly brown hair.

She has brown eyes.

She likes chess.

She likes cats.

She also likes peanut butter.

Her earlobes are not attached.



The Altos sat down and began comparing all the responses. They were a bit upset to find that none of the candidates were a perfect match, though all of them had enough in common that they might be related to Heather.

“I don’t think we understand enough about heredity to figure out who is related and who is not,” said Mr. Alto.

“I agree,” sighed Heather, who was terribly disappointed that they couldn’t figure out who her twin was.

“I know,” said Mrs. Alto, “why don’t we take the responses over to Mrs. Jean’s house? She’s a genetic counselor, and spends her whole day researching and talking to parents about the **traits** they pass on to their children.”

So they gathered all their responses and brought them to their next-door neighbor, Mrs. Jean, and asked her for help.



The Selection

Mrs. Jean carefully read the interview questions and then scanned the responses. "First of all," she began, "let's talk about each of your questions. Your first question is about hair, and it's true that hair color and type is something passed down through your genes."

"Jeans, like blue jeans?" asked Heather.

"Actually, I meant genes, spelled G-E-N-E-S, which are units of heredity that transfer traits like hair and eye color from one generation to the next," Mrs. Jean explained.

"Human genes are found in pairs, and you get one from your mother and one from your father. Genes can either be dominant or recessive, which means that a dominant gene will always **override** a recessive gene. For example, with hair, the genes for brown hair and curly hair are dominant, while the genes for blond hair and straight hair are recessive."



"So that means my twin has to have curly brown hair, like I do," said Heather.

"Not necessarily. Hair is something you can change by **bleaching** blond or straightening. So I would say that you can't really use hair type to indicate heredity unless you know for certain that the person has not changed his or her hair in any way."

"I guess we don't know whether or not any of our finalists changed their hair," said Mrs. Alto.

"Now, about eye color; the brown-eye gene is dominant while the blue-eye gene is recessive, so eye color used to be a very good **indicator** of heredity. But nowadays, people can wear colored contact lenses and change the color of their eyes."

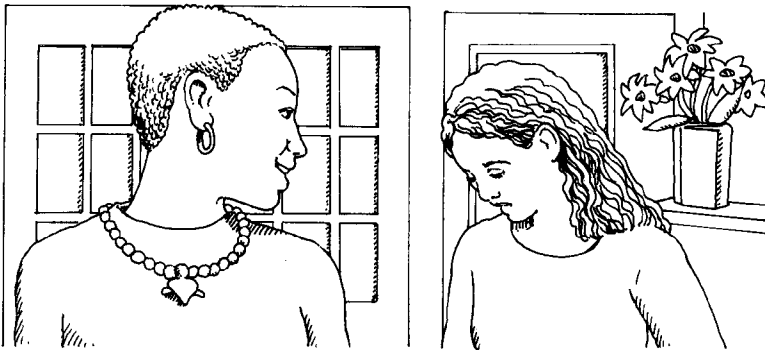
"I suppose you're right," said Heather, trying not to sound disappointed.

"And three of these other questions about liking chess, cats, and peanut butter all deal with **acquired** traits, which means they're all things you can learn to like or not like. You aren't necessarily born liking chess, cats, or peanut butter, so I'm afraid these questions will not help you find your twin."

Heather's head hung low, as did Mr. and Mrs. Altos'. It seemed they had asked all the wrong questions.

"Don't look so discouraged! This last question about attached earlobes may be the key," said Mrs. Jean. "The gene for attached earlobes is recessive, while the gene for unattached earlobes is dominant. In order for a recessive trait like that to appear, both of Heather's genes for earlobes must be recessive, so she knows each parent carried at least one recessive earlobe gene."

Mrs. Jean paused for a moment and picked up the picture of Heather's parents. "Look at your birth parents—you can see they both have attached earlobes, so you know that both of their genes were also recessive. There is no way that two parents who carry only recessive genes could have children with unattached earlobes!"



Heather began thinking out loud, "Okay . . . both my parents had attached earlobes, which makes sense because I have attached earlobes, too. That means that my twin must have attached earlobes, and the only one of the finalists who does is Harry. Harry is my twin!"

"That's right, Harry could possibly be your twin," said Mrs. Jean. "But he also may not. It may be just a coincidence that his birthday is the same as yours, that he came from the same adoption agency, and that you both have attached earlobes. In order to be certain that he is your twin you should both have your DNA tested. DNA carries your genetic code. If your DNA carries some of the same codes, then you are brother and sister."

"But . . . I thought my twin would be a girl," said Heather.

Mrs. Jean responded, "Only **identical** twins are the same gender, because identical twins have exactly the same genes. They were born from the same egg that split in two, but **fraternal** twins were born from two different eggs. They're more like regular siblings, only they were born at the same time."

"So, if Harry and I get our DNA tested we can find out for sure whether or not we are twins. Let's go tell Harry!" Heather exclaimed.



The Happy Reunion

The Altos quickly called Harry and his family, who were thrilled to hear that Harry and Heather might be twins.

The next night, the Altos invited Harry and his family for dinner. Harry and Heather discovered that there were a lot of things they had in common. Both were left-handed and both laughed as they tried in vain to roll their tongues. Both got their first tooth at ten-months-old and named their first pet Socks. After talking things over, both families agreed to get the children's DNA tested. However, they all agreed that they had enjoyed each others company so much that they **anticipated** spending a lot of time together in the future, even if Harry wasn't Heather's twin.

Glossary

acquired	something gained through experience, rather than something one is born with (p. 18)
anticipated	eagerly looked forward to (p. 21)
bleaching	lightening by removing color (p. 18)
blustery	very windy (p. 4)
concisely	using as few words as possible (p. 14)
identical	exactly the same in every way (p. 20)
indicator	a clue or sign that something exists in a particular way (p. 18)
fraternal	[from Latin, "like brothers"] twins born at the same time who are not identical, but like regular brothers and sisters (p. 20)
override	to automatically take over, cancel out, or replace another (p. 17)
recite	to speak out loud something memorized or known well (p. 6)
sibling	a brother or a sister (p. 9)
traits	specific characteristics or descriptive details (p. 16)

Name _____

INSTRUCTIONS: Complete the *Prediction* column **before** reading each chapter. Revise the prediction as you read in the *Revise* column, and write a check mark in the *Confirm* column if you can confirm your prediction after reading each chapter. Record inferences you make as you read in the *Inference* column.

Chapter	Prediction	Revise	Confirm	Inference
"The Note"				
"Telling Heather"				
"The Search"				
"The Interviews"				
"The Selection"				

Name _____

INSTRUCTIONS: Change the underlined words by adding the suffix *-ly*. Write the new word in the space next to each sentence. Then write a sentence using the new word. Remember to change the *y* to an *i* before you add *-ly*.

She was very <u>happy</u> when she heard she might win.	
We need to finish this job in the <u>immediate</u> future.	
He has been my <u>friend</u> for many years.	
She was <u>careful</u> not to spill her drink.	
"It was an <u>easy</u> win against the weaker team," she said.	
We were <u>quiet</u> while the baby was sleeping.	

Name _____

INSTRUCTIONS: Create the sentences using apostrophes as indicated.

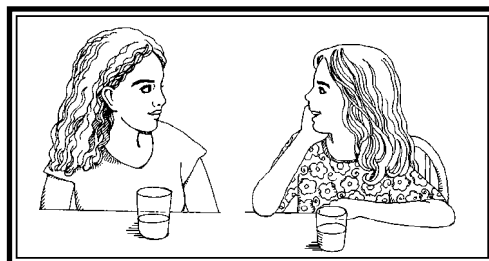
1. Write two sentences with contractions about Heather's adoptive parents.

2. Write two sentences with singular possessive nouns about Heather.

3. Write two sentences with plural possessive nouns about Heather and Harry.

4. Write a sentence with possessives about the earlobes of Harry and Heather.

5. Write a sentence with a contraction and a possessive noun about yourself.



The Life of Cesar Chavez

A Reading A-Z Level Y Leveled Reader

Word Count: 2,189

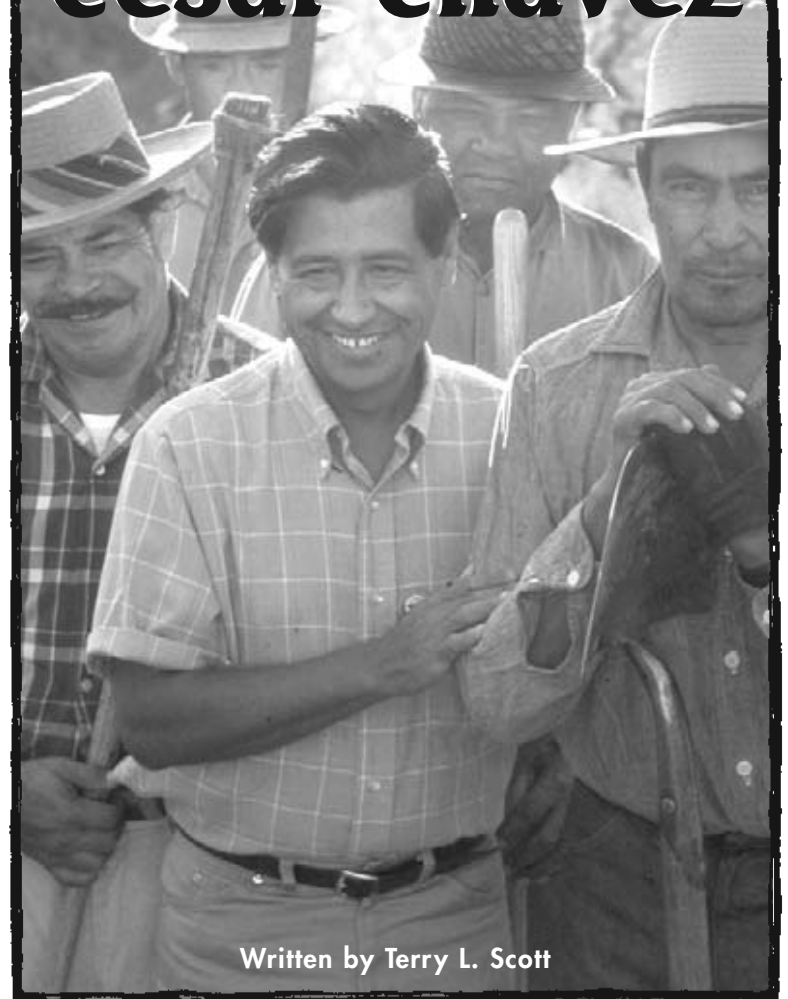


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The Life of Cesar Chavez



Written by Terry L. Scott

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About the Author:

Terry L. Carruthers Vasquez Scott worked with the United Farm Workers for 14 years, from 1974 until 1988. She was a boycott director in several cities and also spent ten years working at La Paz, the UFW's administrative headquarters. During 1976, she was a member of Cesar's personal staff, meeting with him on a daily basis and helping ensure that projects were being completed according to his wishes. She was present in Delano for Cesar's last fast, in 1988, and also for his funeral in 1993.

Cover photo: Cesar Chavez walks in a field with grape pickers in support of the United Farm Workers Union (1968).

The Life of Cesar Chavez
Level Y Leveled Reader
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Correlation

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Introduction

Cesar Chavez was one of the most famous labor leaders in the world. Today, more than a decade after his death, he continues to be one of the most revered and best-loved Hispanic figures in the history of the United States. He was a poor farm worker with little formal education, but against great odds he founded and successfully organized a **labor union** for farm workers. A union is a group of workers who gather their power together to fight against low wages and dangerous working conditions. Cesar was absolutely dedicated to **nonviolence** and used many creative tactics in his organizing, such as **boycotts**, **fasts**, **marches**, and **civil disobedience**. Although he worked tirelessly to improve wages and working conditions for farm workers, Cesar never earned more than \$6,000 per year. Through his example of fighting courageously for the dignity of all people, he inspired millions of Americans to work for social justice for poor people around the world. He was a humble and spiritual man who dedicated his life to helping others. He was a true American hero. This is his story.

A Humble Beginning

Cesar Estrada Chavez was born on March 31, 1927, near Yuma, Arizona. When Cesar was five years old, his family moved to a small farm that had belonged to his grandfather. Cesar's memories of the farm were filled with the love of his family and the security of being part of a stable community. He and his younger brother Richard were inseparable, and although they had to do chores around the farm, they also had time to play and explore the Arizona landscape.



Cesar at age 3 with an unidentified friend

Cesar loved reading and learning, but his early experiences with school were not positive. Cesar's family spoke only Spanish at home, but at school Cesar was punished with a smack of a ruler across his knuckles if he used his native language. At school, he was discriminated against for being Mexican-American and was hurt and angry at being treated like a second-class citizen. Cesar's mother, Juana, a devout Catholic, was a firm believer in nonviolence. She insisted that Cesar never react violently to the injustice he witnessed and experienced.

Big Changes

Life for the Chavez family changed abruptly in 1937. Through a series of bad deals by one of their neighbors, the Chavez family lost their farm. They joined the many other poor families who traveled west during the **Great Depression**, looking for jobs as **migrant farm workers**.

Life on the road was very different from life on their farm in Arizona. Most farms in California were owned by corporations or wealthy growers who wanted cheap labor in order to keep profits high. They provided camps for the workers to live in. Many families crowded into tiny shacks, while others lived in tents along riverbanks or under bridges.



Growers often provided poor housing.

Besides being hard work for low pay, farm labor was also dangerous. Farm machine accidents and exposure to insect- and weed-killing chemicals resulted in injury, illness, and even death. Basic necessities, such as toilets and fresh water, often were not provided.



Harvesting crops was backbreaking labor.

With so many people looking for work, it was difficult to find jobs, and money was scarce. Even though the farm workers harvested tons of fruit and vegetables, many did not earn enough to buy food for themselves. Although the Chavez family was also struggling, Cesar's mother often shared their food with others who were less fortunate. Cesar didn't understand this—why would his mother give away the little food they had worked so hard to get? But Juana always insisted that service to others was more important than satisfying one's own needs.



Cesar's graduation from the eighth grade in the early 1940s



Tough Times

For several years, the Chavez family moved around California, finding work wherever they could. By the time Cesar graduated from the eighth grade, he had gone to more than 30 schools. He was often teased because he didn't have decent clothes or shoes and because he spoke English with an accent. Cesar and his siblings did odd jobs after school and worked in the fields with their parents on weekends and during the summer. Working in the fields was **drudgery**. Cesar hated that his family had to work for someone else, rather than for themselves. He felt closed in by the crowded **barrios** and labor camps, and he painfully missed the freedom of the family farm.

But the worst part about being a migrant worker was the fact that workers were often cheated out of their already **meager** pay. **Labor contractors** promised work when there was none, or kept workers' wages until they completed a dangerous job. One time, the whole family worked at a vineyard for seven weeks, seven days a week. At the end of the harvest, they found that the contractor had left without paying them, and there was nothing they could do. Many times, the whole family walked away from jobs when they felt they were being treated unfairly. Dignity was more important than the money they would earn.

A farm worker irrigating a field by hand



Cesar in the Navy, 1946

At age 15, Cesar left school and worked in the fields full time to help support his family. Two years later, during World War II, he joined the U.S. Navy, hoping to get away from the life of a migrant worker.

Even though he never fought in combat, he didn't enjoy the military, and he returned to California when his tour of duty ended. He married Helen Fabela, and they had eight children. They dreamed of sending their children to college so they might have an easier life than Cesar had. The family moved to San Jose, California, to be closer to Cesar's brother Richard, settling into a barrio known as *Sal Si Puedes*—"get out if you can."

The Beginning of Activism

In *Sal Si Puedes*, Cesar often drove Father Donald McDonnell, a Catholic priest, to and from the labor camps to say Mass for the workers. On their long drives, they would talk about farm workers. While Cesar knew a lot about the actual work, he knew very little about the economics behind labor, which Father McDonnell explained.

Father McDonnell also gave Cesar many books on social injustice, including a biography of Mohandas K. Gandhi. Gandhi led the nation of India to independence from British colonial rule entirely through nonviolent means. He organized millions of Indians into a peaceful yet powerful economic and political force. What stood out to Cesar was the fact that, rather than giving orders, Gandhi led by example, staging protests, hunger strikes, and civil disobedience.

Mohandas K. Gandhi



Cesar registering voters at the CSO office in the 1950s

Eventually, Cesar heard of a group called the Community Service Organization (CSO). The CSO worked in urban areas in California, helping poor people register to vote, get access to health care, and fight police brutality and racial discrimination. Cesar met a man named Fred Ross and accompanied him to CSO meetings. He watched the way Fred helped people through **grass-roots** organizing. Fred was a great motivator who inspired people to stand up for themselves. Before long, Cesar was working for the CSO full time, and after ten years he rose to become its national director.

But Cesar wanted to do more. He proposed that the CSO organize a labor union for farm workers. The idea was supported by Dolores Huerta, another young activist. The CSO was opposed to the idea; they thought unions were controversial and dangerous. When the proposal came up for a vote, it was defeated. After the vote, Cesar stood up and announced that he was resigning as national director. Two weeks later, on his 35th birthday, Cesar left the CSO in order to start a union for farm workers.



Dolores Huerta signs up farm workers at the National Farm Workers Association founding convention, September 30, 1962.

Sí Se Puede: The Birth of a Unión

A labor union is a group of workers who organize together, pooling their money and power. Unions are much stronger than individual workers, and as a group, unionized workers can demand certain rights and benefits. If a union is dissatisfied with a job, it can go on strike, refusing to work and shutting down an industry until its demands are met. Many factories, mills, mines, and docks had been unionized by the 1930s, resulting in higher wages, safer working conditions, and other benefits, such as medical insurance.

But many people considered organizing a labor union for farm workers to be impossible. Farm workers moved around following the crops, not staying in one place long enough to plan action. Also, they were often recent immigrants who did not speak English well and were afraid to make trouble for themselves. Finally, unlike industrial workers, farm workers had no laws protecting them from being fired if they tried to organize. For farm workers who lived in labor camps, being fired meant not only losing their jobs, but also losing their homes. Cesar knew a union could make big improvements in the lives of farm workers, and he believed that, even though others had failed, *Si Se Puede*—"it could be done."



These photos show two situations the United Farm Workers fought against: child labor (left) and the short-handled hoe (below). The short-handled hoe forced farm workers to bend and stoop all day long. Working in this position often led to severe pain and lifelong back injuries. The short-handled hoe was banned from use in California in 1975.



Cesar, Helen, and six of their eight children in the late 1960s in Delano, California. Top row (left to right): Ana, Eloise, Sylvia, Helen, Cesar; bottom row (left to right): Paul, Elizabeth, Anthony. Not pictured: Fernando and Linda.



Cesar and Helen moved to Helen's hometown of Delano, California, where her family could help care for the children. Helen's support of Cesar's work and goals was crucial to Cesar, since he would not have an income.

Cesar began driving up and down the fertile San Joaquin Valley in an old beat-up station wagon. He met with farm workers in their homes and talked with them about their problems. His plan was to build the union slowly, one worker at a time. He felt very strongly that the union must belong to the workers, not to outside organizers.

Cesar was small and soft-spoken, but he was very persuasive. Soon others, like Dolores Huerta from the CSO, joined his efforts, although none of them, including Cesar, were paid. Many times, Cesar didn't know how they would buy gas or food, but somehow things worked out. Often, the farm workers fed Cesar and the other organizers when they came to their homes.



Cesar speaking to farmworkers



Cesar stands by his much-used car and advertises the *huelga*, or strike.

Huelga! The Delano Grape Strike

In 1965, a group of Filipino farm workers went on strike against the Delano-area grape growers. They were asking for a pay raise to \$1.40 an hour.

Cesar had hoped for another two or three years of organizing before calling a big strike, but he knew he had to support the Filipino strikers. One week later, 1,200 member families of Cesar's National Farm Workers Association (NFWA) voted to join the strike. All of the laborers stopped working, even though there was only \$82 in the union treasury to support them.

Workers set up **picket lines** in the fields, proudly waving their homemade union flags, which were red with a black eagle in the center. Support for the strike was strong, but Cesar knew it would be a tense situation. Right from the start, he insisted that the union members never use violence.

Cesar also understood that in order for the strike to succeed, it was important to get support from outside the Delano area. Strikers and their families went to cities all across North America, telling people about the working conditions of the grape pickers and asking them not to buy grapes. The boycott would take business away from the growers until they were willing to sign a union contract.

Farm workers on a picket line in the mid- to late 1960s



Cesar worked extremely long hours during the strike. He is pictured here at one of the union offices in 1965.

During the long struggle, Cesar worked tirelessly, and like Gandhi, he led by example. His deep religious faith helped him through many tough times. Angry grape growers made threats on Cesar's life. He also faced challenges from within the union. At one point, some of the farm workers became discouraged and wanted to resort to violence. If the grape growers wouldn't listen and the police kept trying to break up the picket lines, why shouldn't the workers fight back?

Cesar had to make the workers stop and think about what they were suggesting. He went on a water-only fast that lasted 25 days. Those who still wanted to use violence would have to face the consequences of allowing Cesar to starve.

The fast had a tremendous impact. People worried that Cesar would damage his health, but when they saw him making such a huge sacrifice, it made them think about what they were doing. Cesar's fast re-energized the farm workers and put an end to the talk of violence.



Cesar with Robert F. Kennedy, presidential candidate and brother of U.S. President John F. Kennedy, in Delano, California, March 1968. The focus of this fast was to rededicate farm workers to nonviolence.



Cesar speaks to a crowd during the 1975 Gallo wine boycott.

Just the Beginning

Support for the boycott continued, and after five long years, the Delano grape growers agreed to the union's demands. Against all odds, Cesar's efforts had succeeded. As sweet as it was, this was only the beginning. For Cesar, working to improve the lives of farm workers was a lifelong endeavor. As he often said, "The rich have money, but the poor have time."

For the rest of his life, Cesar continued to work on behalf of farm workers. In 1972, Cesar's union chose a new name: The United Farm Workers of America (UFW). Membership grew to 80,000, and the union expanded into other crops besides grapes. There were other strikes and boycotts, many of which received great

support from the American public. At one point, a **poll** showed that 17 million Americans supported the UFW. In 1975, California finally passed a law that protected farm workers from being fired when they tried to organize.

There were also tough times. Though the UFW remained nonviolent, strikers were often victims of violence. Between 1972 and 1983, four farm workers and one young supporter were killed. Cesar also undertook two more fasts. The last one, which ended after 36 days in August 1988, called attention to the harm that pesticides cause farm workers and their children.



Rev. Jesse Jackson kisses Cesar's hand and Robert F. Kennedy's widow, Ethel, looks on while Cesar breaks his last fast.

Cesar's Legacy

Cesar Chavez died peacefully in his sleep on April 23, 1993. He was 66 years old. Over 50,000 farm workers and UFW supporters came to his funeral in Delano to honor the courageous and humble man who worked so hard for dignity for all people. It was the largest funeral for any labor leader in the history of the United States.

In 1991, Cesar received the Aguila Azteca (Aztec Eagle), Mexico's highest award for people of Mexican heritage who have made contributions outside of Mexico.

On August 8, 1994, Cesar became the second Mexican-American to receive the Presidential Medal of Freedom, the highest civilian honor in the United States. President Bill Clinton presented this award to Cesar's widow, Helen.

On August 18, 2000, the state of California officially made March 31 "Cesar Chavez Day of Service and Learning." On this special day, school children across the state perform service for communities in California in honor of the life and work of Cesar Chavez.

Explore More

❶ On the Web

- A. In the address window, type: *www.google.com*.
- B. Then type: *Cesar Chavez*. Click on “Google Search.”
- C. Read the colored links. Click on one that looks interesting.
- D. When you want to explore other links, click the back arrow on the top left.
- E. Or try some different searches: *United Farm Workers*, *grape boycott*, *migrant farm workers*, *civil disobedience*, or *child labor*.

❷ A Look at the Labor Movement

Cesar Chavez and the United Farm Workers are just one part of the long history of the labor movement in the United States. Almost every industry, from truck drivers to movie actors, has a union to protect its workers. There is even a national holiday, Labor Day, to honor the workers who provide the goods and services we use every day. To learn more, check out this link on the Internet (and search for other sites, too!):

<http://kids.infoplease.lycos.com/spot/labor1.html>

On this site, you can read the article and click on the underlined words to find more links about the labor movement and the origins of Labor Day.

- ### ❸ At the Library
- Ask the librarian at your school or local public library for books on Cesar Chavez, farm workers, and the labor movement.

Glossary

barrios (<i>n.</i>)	neighborhoods populated by Spanish-speaking people (p. 8)
boycotts (<i>n.</i>)	protests in which people refuse to buy something (p. 4)
civil disobedience (<i>n.</i>)	the act of breaking laws specifically because they are unjust (p. 4)
drudgery (<i>n.</i>)	hard, boring work (p. 8)
fasts (<i>n.</i>)	periods of time when a person voluntarily goes without food, often as a protest or statement (p. 4)
grass-roots (<i>n.</i>)	describing a type of political movement beginning with people who lack political power (p. 12)
Great Depression (<i>n.</i>)	time in the 1930s when poverty, unemployment, and famine were common (p. 6)
labor contractors (<i>n.</i>)	farm bosses in charge of hiring and paying workers (p. 9)
labor union (<i>n.</i>)	laborers who collect their money and power to form an organization in hopes of gaining better wages or other benefits from a job (p. 4)
meager (<i>adj.</i>)	low; too little to be worth anything (p. 9)
migrant farm workers (<i>n.</i>)	workers who move to wherever crops are ready to plant or harvest (p. 6)
nonviolence (<i>n.</i>)	not using physical force, fighting, or violence as a matter of principle (p. 4)
picket lines (<i>n.</i>)	protests in which people march or stand in lines, often waving flags or signs (p. 19)
poll (<i>n.</i>)	a large survey used to get people's opinions (p. 23)

Name _____

INSTRUCTIONS: After reading *The Life of Cesar Chavez*, fill in the boxes below with the appropriate information from the book.

WHO is the book about?	WHAT did he do?
WHEN did this happen?	WHERE did it happen?
WHY did this happen?	HOW did he make this happen?

Name _____

INSTRUCTIONS: Before you read *The Life of Cesar Chavez*, fill out the middle column with your ideas of how the word or phrase will be used in the book. Fill out the third column with the meaning that was used in the book.

Content Vocabulary	Before Reading How I think the word will be used	After Reading How the word was used
discriminated against (p. 5)		
shacks (p. 6)		
migrant farm workers (p. 6)		
nonviolent (p. 11)		
civil disobedience (p. 11)		
dignity (p.24)		
fast (p. 21)		

The Firefighter

A Reading A-Z Level Y Leveled Reader

Word Count: 1,869



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The Firefighter



An Interview with Todd Cupell
Conducted by Julie Harding

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Front cover: Firefighter Todd Cupell poses in front of the Rodeo Fire in Arizona, one of the most destructive of the 2002 fire season.

Title page: A wildland firefighter sets a back burn using a drip torch; Rodeo/Chediski Fire, Arizona, 2002.

Please note:

Several photos in this book were taken at the Rodeo/Chediski Fire. This fire began as two separate wildfires, Rodeo and Chediski, and merged into one.

The Firefighter
Level Y Leveled Reader
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An Interview with Todd Cupell
Conducted by Julie Harding

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Correlation

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Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A

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This mobile home park in Arizona was devastated by the Rodeo/Chediski Fire.

Introduction

Wildfires are a part of nature. Many scientists have found that certain plants and animals depend on fire to clear the wilderness of dead material, allowing room for new growth on the forest floor. Some species of trees, such as the lodgepole pine, actually need fire to melt the waxy seals on their cones and release their seeds. But plants and animals are not the only things that use the wilderness.

Human beings live near wilderness areas, grow crops and livestock in the countryside, and visit wild areas such as national parks. When fire threatens homes, farms, ranches, or parks, wildland firefighters must try to save them.

Often, wildfires are simply too large to put out, so wildland firefighters try to control the fires by forcing them to move in a certain direction. They clear fuel away from the fire's path, either by moving it out of the fire's way and creating a firebreak or by burning it away using a small, controlled back burn.





Todd Cupell, a wildland firefighter from Tucson, Ariz., gave this interview in 2002 during one of the worst fire seasons in history.

Ups and Downs

Interviewer: What is your favorite thing about being a wildland firefighter?

Todd: I love that I get to see some of the most scenic country in the world. Because I have to hike into the most remote areas to get to fires, the countryside is absolutely beautiful. I see a mixture of everything—landscape going from green, lush, gorgeous countryside to flames and burned areas. Many people are **mesmerized** by the flames and smoke. I also like the variety, because I never do the same thing two days in a row.

Interviewer: What is the worst thing about your job?

Todd: There are a couple of things I don't like. One of the things I don't like about firefighting is seeing the destruction that fire causes, mainly to property and people's residences.

That's real tough to stomach because you work so hard to save property that has value to people. When you feel like you didn't have enough time or like you didn't do a good enough job, it's difficult. Sometimes I feel like if I had just done one other thing, maybe I could have saved a home. That is probably the toughest thing about firefighting.

Interviewer: What is the other bad part?

Todd: The other bad part is just the mop-up. We go out and turn over every rock and ash, take our gloves off, and run the backs of our hands along the ground to make sure there's no heat left. That's just long, hot, **tedious** work. Plus we've got all our gear on our backs, like a **bladder bag** (a pump that sprays water) and hand tools. It's a hot, heavy, dirty job.



Bladder bag



Wildland firefighters set small, carefully controlled back burns to eliminate a wildfire's fuel supply.

Interviewer: What was the scariest moment you ever experienced on a fire?

Todd: There are lots of scary moments, because dangerous things are always going on all around you. One of the scariest things is **entrapment**, which is when a fire burns all around you and cuts off your escape route so there is no way out. Firefighters put up their fire shelters and hope the shelters are enough to save them. Entrapment is the biggest fear that firefighters face, because it's how many firefighters lose their lives.



Fires started by nature are often located in remote areas.

Causes of Fire

Interviewer: How do wildfires get started?

Todd: Wildfires get started for two main reasons, the first of which is Mother Nature. Lightning strikes are the most common natural cause. Once in a while a windstorm is strong enough to knock over a power line and cause a spark, which causes a wildfire. But still, most wildfires are caused by lightning.

The biggest problem is that when nature causes wildfires, most of the time the fires are out in the middle of nowhere. No one sees them to report them in time, and it's too late to control them.

Humans are the second cause of wildfires. Unfortunately, this year humans have been the cause of almost all the major wildfires in Arizona. Embers blow from unattended illegal campfires, setting fire to the area.

Then there are intentionally set fires, like the Rodeo Fire, which was set by a firefighter. He hadn't had much work this season, so he wanted to set a fire and create a job for himself. But the fire got out of control and endangered other firefighters and people's homes. The Madera Canyon Fire was actually started by a helicopter that flew too low and clipped a power line.

Vehicles start wildland fires too, such as when somebody blows a tire and sparks fly to the side of the road, igniting dry brush or grass. That's happened a couple of times this year.



The Bullock Fire, north of Tucson, Ariz., was suspected to have been started by a campfire.



Do You Know?

Special firefighters called smoke jumpers get into extremely remote areas of large wildland fires. They parachute from airplanes into the hearts of fires to combat the flames.

Interviewer: How do you feel about people who cause wildfires?

Todd: It's a shame—especially this year, when we had two fires that were intentionally set by firefighters. Whatever the reason they might have, it's a real shame, and it puts a black mark on firefighters who are out there working hard, who love what they do. We put our lives on the line to save people's homes and property, and the **arsonists** are out there setting fires on purpose. They're not very well liked.

Crew Life

Interviewer: What is life with the crew like?

Todd: You spend a lot of time at the station and working with your crew—they're very much like a family. One guy put it cleverly; he said that fifty years ago, firefighting was a brotherhood. Now, with so many female firefighters, it is more like a family, with men and women working closely together toward the goal of controlling fire. When we get off a shift, there is always a lot of **camaraderie**. We eat lunch together, we eat dinner together, and "families" are always together on fires.



Firefighters take a much-needed break after working for 16 hours on the Rodeo/Chediski Fire.

If there are firefighters from several cities working on one fire, they still usually eat with the members of their own team. You never see any fights between firefighters.

When you're on the **fire line**, you have to trust the people you're with. You have to know that whoever is working with you is **competent**. The training that you've gone through together, the fires that you've fought together, and the experiences that you've had really help, because you know you can trust that person. Your life depends on them and vice-versa.

Interviewer: Describe a typical day in the life of a wildland firefighter.

Todd: Well, it depends. Usually it's pretty quiet around here, but during the Rodeo Fire, the first few days were absolutely **brutal**. We spent 43 hours on the fire line without sleeping. I'd get up at about five o'clock every morning and go to the morning **briefing** with the forest service to find out what was going on and where everybody was going. We'd go out on the fire lines and spend all day cleaning up around houses, setting back burns, and doing what needed to be done to help work on the fire.

Tools of the Trade

Interviewer: Can you describe some of the gear you use on a fire?

Todd: The most important gear firefighters have is their Personal Protection Equipment, or PPE, which is the clothing they wear. PPE consists of a **Nomex** shirt, Nomex pants, and **fire-retardant** soles on our boots. We have to wear leather boots, because we can't have any fabric or cloth that can catch fire or melt.



Todd in his full gear, including a radio, a head lamp, and safety goggles

Interviewer: What is Nomex?

Todd: Nomex is a special fabric that is fire retardant, so if I put a match to it, it won't catch on fire. It's a big lifesaver because if we wore normal clothing, there's a good chance that all the sparks flying around would light it on fire.

In order to work on a fire, you also have to carry a folded-up fire shelter. A fire shelter looks like a one-person tent made of aluminum and fiberglass. It's the last chance you have to save your life.

If you're entrapped and a fire is going to burn over you, you open the shelter and get in. The temperature inside a fire shelter can get up to 190 degrees (Fahrenheit; 88°C), but it's survivable. If you weren't in it, you could get 2,000-degree (Fahrenheit; 1,093°C) flames on you, and you'd die instantly. Or if you inhaled the gases and super-heated air, they would burn and damage your lungs and could kill you. People still die in fire shelters, but the shelters save a lot of lives.

Interviewer: What else do you need?

Todd: You have to wear a hard hat, because there are snags, such as dead trees or falling branches, that can hit you. There are actually numerous things that can fall.

We also have an IA (Initial Attack) pack, which is basically a backpack that carries quite a bit of water. We also carry other things in the pack, usually one change of clothes and some **fusees**, which are ignition devices kind of like very hot flares. One of the ways firefighters try to save themselves from entrapment is to use a fusee to light another fire to burn all the fuel in an area. A firefighter can get into the black area that has already been burned, which is what we call a safety zone.

Do You Know?

An IA pack holds an amazing amount of equipment. Here is just a partial list:

- quick-deploy fire shelter
- a variety of hand tools
- reference books for dealing with every kind of fire
- Velcro (for repairing clothing and packs)
- extra socks and bandannas
- extra Nomex pants
- extra shoelaces
- lip balm
- earplugs
- goggles
- fusees
- matches
- electrical tape
- MREs—
"Meals Ready to Eat"



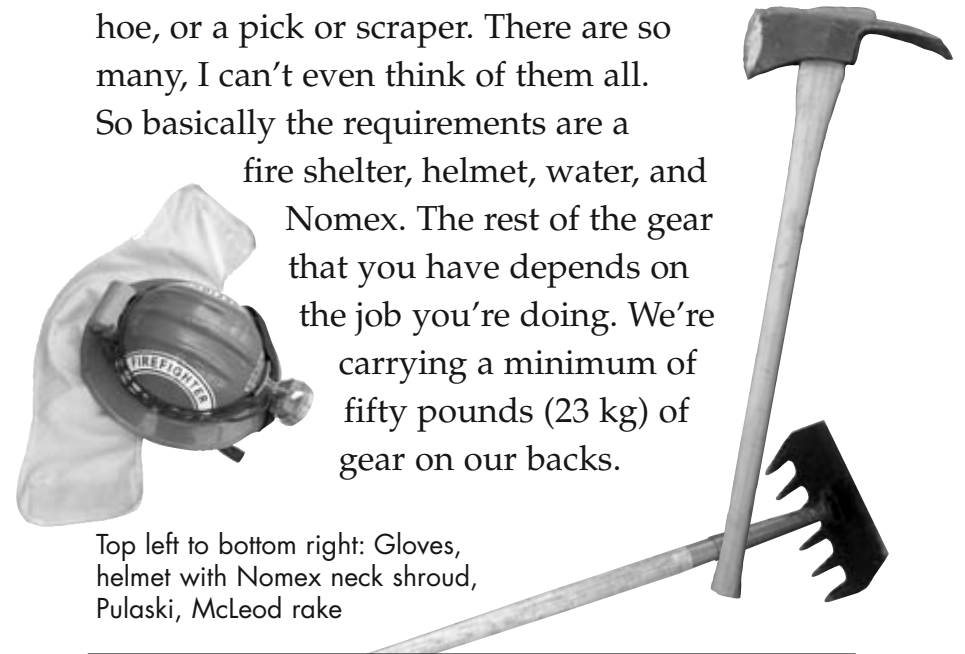
We carry a ton of things. We always have to have a pair of gloves with us because we're dealing with heat and flames and wood, so we have to have hand protection. Each firefighter will usually carry one hand tool, either a **Pulaski**, which is a combination ax and hoe, or a pick or scraper. There are so many, I can't even think of them all.



So basically the requirements are a fire shelter, helmet, water, and Nomex. The rest of the gear that you have depends on the job you're doing. We're carrying a minimum of fifty pounds (23 kg) of gear on our backs.



Top left to bottom right: Gloves, helmet with Nomex neck shroud, Pulaski, McLeod rake



Do You Know?

Firefighters wear heavy gear and clothing, and they work in hot conditions. Their body temperatures can rise dangerously, and they can sweat away up to a liter of water within twenty minutes! It is very important that firefighters drink water constantly. They must carry all that water, which adds to the weight of their gear.



Firefighters doing the mop-up after a fire is out

Who Fights Fires?

Interviewer: What personality traits are important for someone in your job?

Todd: Probably the most important thing is that you've got to be a team player. You've got to be able to take direction from people and be able to give direction to other people. When you're on a fire line, you've got a whole group of people that you need to be able to work with well. Everybody needs to be on the same page. So firefighters really have to have the ability to cooperate and help others, as well as lead others. Every firefighter has to have the spirit of teamwork in his or her personality.



An airplane drops fire-retardant chemicals in a wildfire's path.

Interviewer: What are some of the qualifications a person would need to become a wildland firefighter?

Todd: You have to be in good shape, and you have to be able to work long hours. You also have to take and give orders well, and you have to love what you're doing. If you don't love it, you won't last long. If firefighting is what you really want to do, you will probably be able to do it if you work hard.

Conclusion

Being a wildland firefighter is not easy. Wildfires are unpredictable; they can change from small, low-to-the-ground brush fires to firestorms that devour the treetops in seconds. Rough terrain can make escape very difficult, and many firefighters lose their lives. Although it is a tough job, firefighting can also be extremely rewarding. Firefighters save people's homes and jobs, and they often help preserve beautiful wilderness areas. If you love hard work and excitement, wildland firefighting might be for you.



The Rodeo Fire just before it burned through the town of Pinedale, Ariz., destroying several homes and the local fire station.

Wildfire Protection and Prevention

Wildfires can happen anywhere—in forests, in grasslands, even in the desert. If your home is near any sort of wilderness area, be prepared in case of a wildland fire.

- Keep an emergency kit handy in case your family needs to evacuate. An emergency kit should contain plenty of fresh water, a battery-powered radio and spare batteries, blankets, food that does not need to be refrigerated, and any medicines or baby supplies your family needs.
- Always obey evacuation orders. If your neighborhood is evacuated, do not stay at your home to try to protect it or your belongings. Do not return to your home until officials tell you it is safe. Leave the firefighting to the firefighters.
- Before evacuating, close all your windows and ask an adult to turn off any gas lines.
- Make sure there are no flammable materials such as piles of brush, leaves, or garbage near your home. Store firewood away from your home.
- Ask your parents to make sure your roof and gutters are kept clean and free of debris.

- Ask your parents if they can get a fire-retardant layer built onto the roof. Often, wildfires throw large sparks into the air, and the falling sparks can set fire to roofs miles away from the fire.
- During extremely dry periods when fire danger is high, have your parents consider removing brush and trees that grow close to your home. These plants are much easier to replace than your home.

If you visit wilderness areas, be sure you follow these steps for preventing wildfires.

- Always follow posted rules for building campfires. If fires are not allowed, do not build one, even if you think it's safe.
- Always have a grownup build and watch your campfire. Never leave a campfire unattended.
- Build a safe fire. Clear any debris away from the fire pit or fireplace. Make sure the outside of the fire is lined with at least two layers of rocks. Keep your extra firewood away from the fire.
- Always keep a large bucket of water and a shovel near a campfire. Put out stray sparks with water or a shovelful of moist dirt.
- Put your fire out with plenty of water. Make sure you stir the ashes so the water can get to every burning bit. Carefully feel over the ground to make sure there's no heat left.

Glossary

arsonists	people who start fires on purpose (p. 10)
bladder bag	a bag full of water that firefighters carry on their backs (p. 6)
briefing	a meeting that gives everyone up-to-date information (p. 12)
brutal	harsh; vicious (p. 12)
camaraderie	friendship (p. 11)
competent	able to do a job well (p. 12)
entrapment	being trapped and surrounded by fire (p. 7)
fire line	the area at the edge of a wildland fire where firefighters work (p. 12)
fire-retardant	helps slow down fire (p. 13)
fusees	very hot flares used to light back burns (p. 15)
mesmerized	amazed; hypnotized (p. 5)
Nomex	a brand-name fire-retardant material (p. 13)
Pulaski	a small tool with an ax on one end and a hoe on the other; named for its inventor (p. 16)
tedious	boring and time-consuming (p. 6)

Name _____

INSTRUCTIONS: Fill in the chart below, listing the causes in the first column, the effects in the second column, and the page number where you found the information in the third column. For the last question, you will have to come up with your own answers and explain how you know this or where you learned it.

Cause	Effect	Page
Lightning strike		
	No one sees the fire to report it in time.	
A person leaves a campfire unattended.		
Firefighters spend lots of time with their team.		
	A firefighter deploys his or her fire shelter.	

THE FIREFIGHTER • LEVEL Y • 1

Cause	Effects	How You Know
Wildfires		

SKILL: COMPREHENSION

Name _____

INSTRUCTIONS: Add the prefix *un-* to the following words. Use the new words in sentences.

1. happy _____

2. familiar _____

3. healthy _____

4. known _____

5. predictable _____

6. lock _____

7. attended _____

The Art of Photography

A Reading A-Z Level Y Leveled Reader

Word Count: 2,104



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THE ART OF PHOTOGRAPHY



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Introduction

While on vacation, your dad drags you out of bed and down to the ocean for a 5 AM “whale watch”—yawn. But wait, look at that huge



tail rising out of the water! Good thing you brought along your camera.

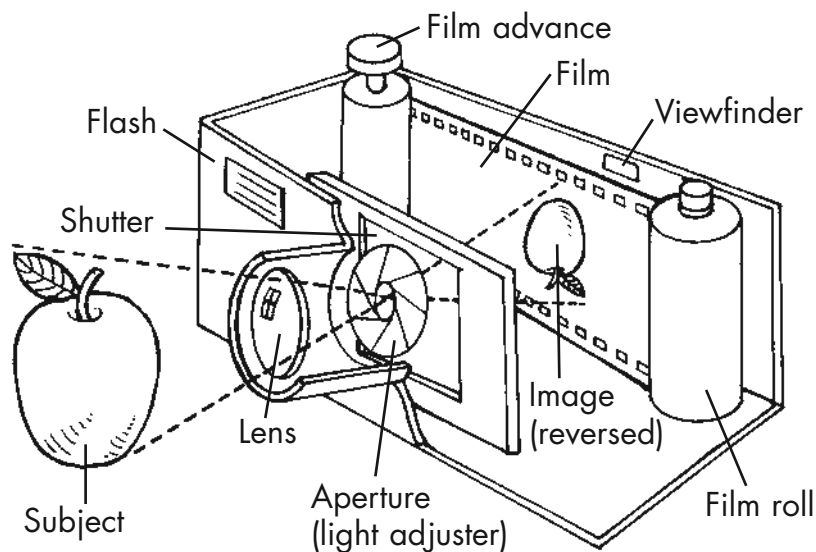
Photographs of whales at dawn, historical

landmarks, or family members doing wacky things preserve your amazing or amusing vacation memories forever. With this book, you will learn tips and tricks for taking great photos anytime, anywhere, all year long.

Taking photographs nowadays is a snap. With inexpensive disposable cameras, basic “point-and-shoot” compact cameras, and digital cameras, all you need to do is aim and click away. That wasn’t so in the early days of photography, when taking pictures required expensive, **cumbersome** equipment, knowledge of chemistry, and lots of patience.

History of Photography

The word “camera” comes from a Latin word meaning “chamber” or “dark room.” A camera is just that: a dark box with light-sensitive film or a chip on its back wall. When you “click” a camera, a **shutter** opens in the front, letting light into the box for a very short time. That light, reflected off an object, forms the image on the film or chip. The lens of the camera, like the lens of your eye, collects and focuses light onto the film or chip.

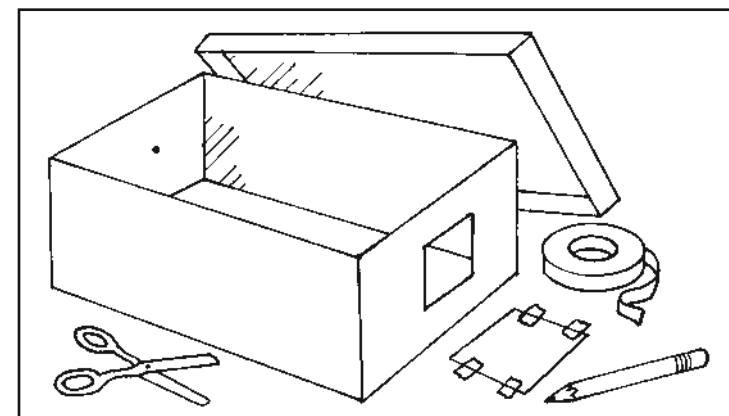


The first **crude** camera was invented around 1500. It could only project an image onto a screen or a piece of paper, like the pinhole camera in the project on the next page.

Try This! MAKE A PINHOLE CAMERA

- 1 Punch a pencil-point-sized hole in the side of a shoebox.
- 2 Cut out a 2-inch (5-cm) square on the opposite side of the shoebox.
- 3 Cut a square of tracing paper slightly larger than this opening and tape it over the opening.
- 4 Tape the top of the shoebox shut so that no light can get in.
- 5 Have someone stand still in bright light.
- 6 Aim the pinhole at him or her and look through the tracing paper. After a few seconds, you should see a small image of that person.

Notice anything unusual about the image you see? Try to trace the image on the tracing paper.





People had to hold very still for early cameras, or pictures would come out blurry, like the woman's face on the left.

It took a few hundred years and a series of scientific discoveries before people figured out how to make permanent images. First, they discovered that certain chemicals turn dark when exposed to light, and then they found a way to use other chemicals to keep the image from fading.

The earliest cameras took hours to record one blurry, black-and-white image. In the 1830s, a French inventor, Louis Daguerre, created a way to make sharp-looking pictures in less than 30 seconds. His images, called **daguerreotypes** (dah-GARE-oh-types) after their inventor, became the first popular form of photography.



Do You Know?

In the early days of photography, it could take half an hour to set up and take one photo. People, especially kids, got restless, but even a small movement during the taking of the picture would ruin it. Photographers would often hold up a metal bird and tell their subjects to "watch the birdie." Right before taking the picture, the photographer would blow air into the bird and make it move its tail or tweet. This often got the attention of the kids, and they would hold still.

It wasn't until the introduction of the Kodak® box camera in 1888 that photography became an affordable hobby. The Kodak camera was lightweight, inexpensive, and easy to operate. Best of all, **amateur** photographers did not have to go through the long, often **painstaking** process of developing the film. Like modern film cameras, the box camera recorded images on a roll of film. People sent the film, along with the camera, back to the company, where prints were made, and the camera was returned with a new roll of film inside.



Early box cameras look big now, but they were small for their time.

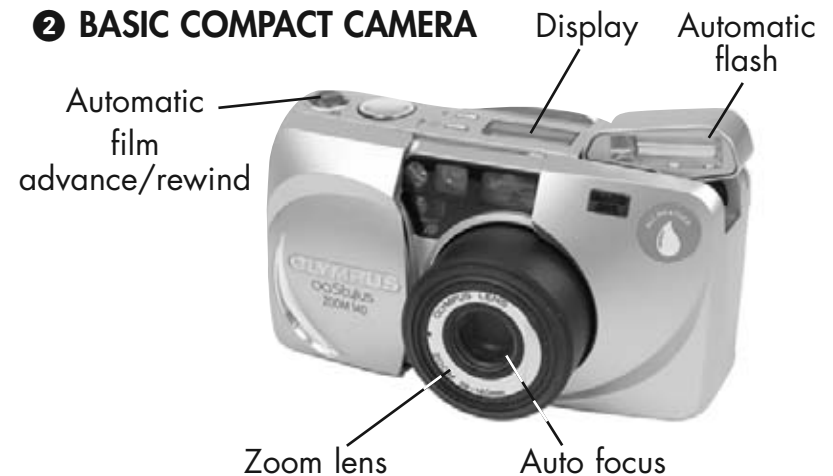
Modern Photography

These inexpensive cameras are the kind you will most likely use as you learn about photography.

① DISPOSABLE OR SINGLE-USE CAMERA



② BASIC COMPACT CAMERA



③ SLR (SINGLE LENS REFLEX) CAMERA



④ DIGITAL CAMERA



Today, many simple cameras use film. Film is a strip of plastic coated with a silver substance that is sensitive to light. When light strikes this silver coating, its chemicals react, forming an



image on the film. After you have taken your pictures, they need to go through a multiple-step process to become

photographs. First, the film is placed in a chemical solution called developer that makes the image visible. Next, the film takes a “stop bath” in another chemical solution that stops the developer before the image becomes too dark. Now



you have a negative that shows the reverse of the image; light objects look dark, and dark objects look light.

A print, also called the positive, is an enlarged copy made from the negative. The developing process is reversed, starting with light projected through the negative onto light-sensitive photo paper. The paper records the reverse of the negative, so you see the image as originally recorded. Then a chemical “fixer” sets the image, or makes it permanent on the paper. Many professional photographers print photos in their own **darkrooms**, but you’ll probably send your film to your local photo lab, where the process is done by machine.



In a darkroom, people still make prints by hand.

What are all those numbers on a roll of film? They tell you the film’s width, or format; its length; and most importantly, its speed. Most film is 35 millimeters wide. Its length, typically 24 or 36, tells you how many pictures you can take on that roll. The number you should note, depending on when and where you plan to take pictures, is the film’s ISO rating, or speed.

The film’s speed tells you how quickly it will react to light. A higher number means the film requires less light, so 400-speed film is better for dim light and for action shots where you are trying to capture movement. Slower 100-speed film is better for outdoor shots taken in full daylight. A good **multipurpose** film is 200-speed.



Choose the right film for the kind of pictures you want to take.



The same dog is in both pictures, but the one on the right has been altered on a computer.



Digital cameras work like other cameras, except they don't use film. Instead, reusable light-sensitive microchips store the images. Shots taken with a digital camera can be seen instantly on the screen. Don't like what you see? Delete the image and try again (remember, there is no film to waste). The shots you want can be transferred to a computer, where you can change them electronically. That's when the real fun of digital photography begins. Make the colors richer, put one photo into another, or remove something (or someone!) you don't want. Retouching, airbrushing, and other improvement tricks once done only by skilled photographers in darkrooms can now be done on a computer. But they still require the same artistic eye and lots of patience.

Ready, Aim, Shoot: The Art of Photography

Now that you know how cameras work, let's get clicking. First, you need to choose a subject, or something you want to take a picture of. It can be a person, a place, a thing—or all three!

Composition, or framing, is how you arrange what's in your picture. If your subject is a person, you want to fill the frame, but leave a little room around the person's head and shoulders. Keep your subject between the lines in the viewfinder or you may cut off the top of his head. That might be good for an "arty" look—or if you don't like him! Don't get too close, or the image may turn out fuzzy.



Bad composition (left) cuts off the subject's head and what he's looking at. Good composition (right) includes the whole subject and what he's doing.





Keep groups of people close together, both side-to-side and front-to-back.

Arrange a group of people so they're all about the same distance from the camera. Otherwise, the ones closer to the camera may look washed out and those in the back may look dark.

Experiment with composition, and don't be afraid to try things and make mistakes. Position your subject in the middle of the frame, and then off to the side. Shoot through a window or an archway. Look for interesting shapes and contrasts, such as a jagged fence against the curves of a hill.

Consider the angle—kneel down and shoot up at your subject to make it look more important. Hold the camera vertically for portraits. Emphasize the foreground (in the front part of the picture), and then try a similar shot emphasizing the background. Shots of scenery often look more interesting when there is a person in the foreground, giving the shot a sense of scale.

Watch the background . . . keep it simple, and make sure it doesn't look like something odd is sticking out of your subject's head. Remove



clutter in the foreground that might take the focus away from your subject, or move yourself for a new perspective.

Pay attention to the background, or you might get a cactus growing out of someone's head!



Exposure is the amount of light that falls on the film. The word “photography” comes from Greek words meaning “to draw with light.” Light is the photographer’s best friend—and worst enemy! Exposure to too much light, called overexposure, will make a picture look washed out, while exposure to too little light, called underexposure, will result in a too-dark picture.

Professional photographers use such tools as light meters, flood lamps, and light-reflecting screens to help them get the correct exposure. Or they may use a flash to make a sudden burst of light, brightening a dim scene. On the simple cameras shown on pages 10 and 11, the flash is built in, and some activate automatically whenever light levels are low.

Lighting Dos and Don'ts

- ◆ Don't shoot directly into light. A subject in front of a window where daylight is streaming in may end up looking shadowy and dark in the photograph. Don't shoot with light coming from the side unless you want an image that is half in the light and half in the shadows.
- ◆ Do have light coming from behind you. But be careful on sunny days—a person looking into the sun may end up squinting in the picture. And make sure your own shadow isn't in the shot.
- ◆ Don't be afraid to use the flash, even when there seems to be enough light. It may help fill in dark spots and even the lighting.
- ◆ Do take the same outdoor shot at sunrise, noon, and sunset to see how the direction of the sunlight can change the look and mood of a photo.
- ◆ Photos of people with glowing “red eyes” happen frequently with inexpensive cameras. To avoid this, turn on more lights in the room and tell your subjects to shift their eyes so they are not staring right into the camera.

The focus, or sharpness of the image, is determined by the distance between the camera lens and the subject, and between the lens and the film or chip. Lenses can only focus on objects that are a certain distance away; most simple cameras focus best on objects about 5 feet (1.5 m) away. Advanced compact cameras come with motorized zoom lenses that move out to take close-up pictures or in for wide-angle shots at the push of a button.

Cameras are very sensitive mechanisms. Even the slightest movement may cause a blurry picture. To keep the camera steady:

- ◆ Hold it with both hands.
- ◆ Keep fingers and hair away from the lens and flash.
- ◆ Tuck your elbows into your sides.
- ◆ Stand with your legs slightly apart so you are balanced and comfortable.
- ◆ For more steadiness, crouch down on one knee or sit cross-legged with your elbows on your knees.
- ◆ Try pressing the camera against a tabletop or a wall.
- ◆ Squeeze the shutter-release button slowly and evenly.

Fun Photography Projects

A panorama is a long, continuous picture that shows a very wide view. It could be a spectacular city skyline, mountain range, beach scene, or simply the view from your front door. Choose an open location without too many objects in the foreground. Imagine the scene broken up into three to five different sections. Practice moving the camera across the view from left to right, or **panning**, without moving your feet. Take a series of photos so that each section overlaps the section before it by about one-third. What you see in the right-hand part of the first shot should be where the left-hand part of the next shot begins. Start at the left side of the scene and work your way toward the right. It's a good idea to take a few shots of each section.

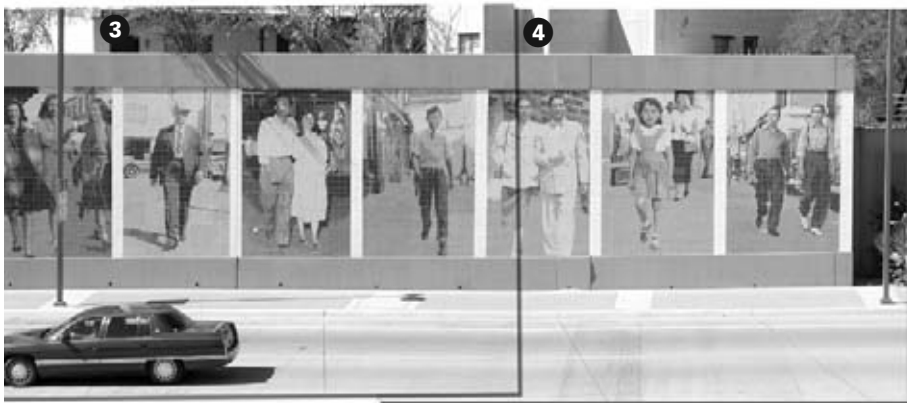


Overlapping four photos of a city mural created this panorama.

Next, lay out the photos so the right side of one matches the left side of the next. Glue or tape them together to form one continuous picture.

Here are some other fun photography projects.

- ◆ You can create cool effects by putting colored cellophane in front of a lens. This will block or reduce the color of the cellophane in your photo. What do you think will happen when you take a picture of a yellow car through a yellow filter?
- ◆ Try aiming the camera through the lens of polarized sunglasses. This helps screen out glare from shiny surfaces and bright sunlight.
- ◆ Make a frame filter by cutting shapes out of black construction paper and taping the paper to the front of the lens. Try star shapes, keyhole shapes, or arches, or use your imagination.



*We had a great time at Universal Studios . . .
3-D glasses and even a visit with Count Dracula!*

- ◆ Select your favorite photos and organize them in an album so they tell a story. Beneath each photo, write the date and place taken, identify the people, and describe what is going on.
- ◆ Don't discard the photos that don't come out well—make a collage. Cut out pieces of unwanted photos and arrange the images to your liking and paste them onto a poster.
- ◆ Create a line of greeting cards. Glue a photo of yourself, family, friends, places you've been to, sights you've seen, shots of wildlife and nature, and so on, onto a piece of paper folded in half. Write a personalized note inside.

Explore More

At the Library

Your local library or bookstore will have many books on photography. They will teach you how to produce great pictures of people, scenery, and weird and interesting things. Have your librarian help you find photography instruction books for kids. Look in your library's art section to find books with famous photographs. You can learn a lot about photography by studying the work of professional photographers.

On the Internet

- A. In the address window, type *www.google.com*.
- B. In the search window, type in the subject you want to learn about, such as *digital cameras* or *photography*. You might find more interesting Web sites if you include the phrase "for kids."
- C. Click "Search." Read the colored links and click on one that looks interesting.
- D. When you want to explore more links, click the "Back" button on the top left.

With Your Camera

One of the best ways to explore the world of photography is to take lots of pictures. Take a camera with you wherever you go. Think about how things around you might make good photographs. See if you can make works of art from the people, places, and objects around you. Don't worry about making mistakes when you're having fun with your camera.

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- pinhole camera, 5, 6

Glossary

- amateur** not professional; someone who does something as a hobby (p. 9)
- composition** how the objects are arranged in a picture (p. 16)
- crude** simple and not very well-designed (p. 5)
- cumbersome** heavy and awkward to carry (p. 4)
- daguerreotypes** old-fashioned photographs invented by Louis Daguerre (p. 7)
- darkrooms** closed rooms, lit by dim red light, where a photographer develops film into prints (p. 13)
- exposure** the amount of light that falls on film (p. 19)
- multipurpose** can be used for many different things (p. 14)
- painstaking** taking much precise and time-consuming work (p. 9)
- panning** moving the camera from side to side from one position (p. 23)
- shutter** piece on the front of the camera that opens and closes when you "click" (p. 5)

Name _____

INSTRUCTIONS: Compare and contrast the sections of the book by their purpose, organization, and word choice.

Section	Purpose	Organization	Word Choice
History of Photography			
Try This! Make a Pinhole Camera			
Modern Photography			
Ready, Aim, Shoot			

Name _____

INSTRUCTIONS: Read the complex sentences. Underline all of the subjects and verbs. Circle the connecting word that separates the clauses or phrases. Then use the connecting words listed to create your own complex sentences.

1. That light reflects off the object and forms the image on the film.
2. Certain chemicals turn dark when they are exposed to light.
3. People sent the film back to the company, where it was developed.
4. After you have taken your pictures, the film needs to be developed.

although _____

because _____

when _____

after _____

Name _____

INSTRUCTIONS: Use a dictionary to write the definition of the Latin or Greek root word. Use the root word to brainstorm modern English words.

–graph _____ _____ _____ _____ _____	tri– _____ _____ _____ _____ _____
bio– _____ _____ _____ _____ _____	hydro– _____ _____ _____ _____ _____
tele– _____ _____ _____ _____ _____	micro– _____ _____ _____ _____ _____

The Story of Lewis and Clark 1

A Reading A-Z Level Y Leveled Reader

Word Count: 1,978



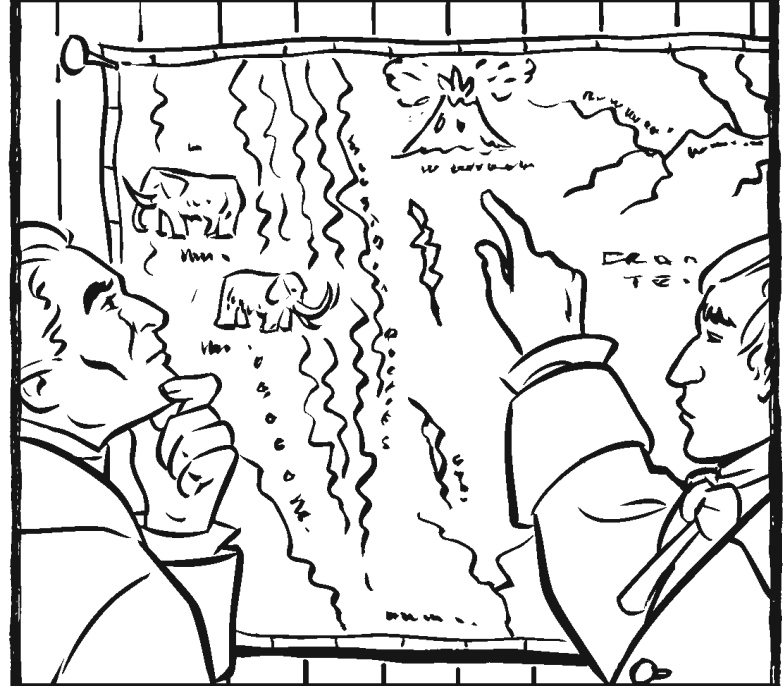
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The Story of Lewis and Clark

Book 1: Up the Missouri River



Written by Peter C. Montin
Illustrated by David Cockcroft

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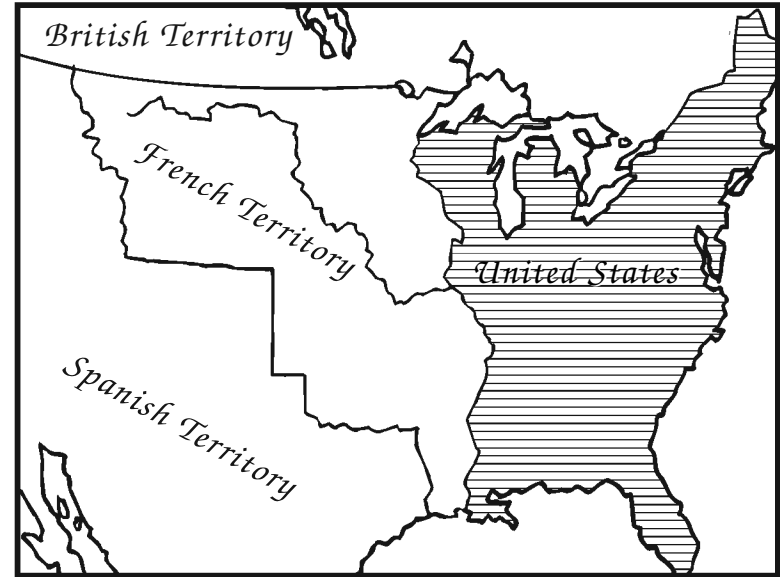
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North America in 1800

Introduction

Two hundred years ago, United States territory ended on the east bank of the Mississippi River. Ships had sailed around South America and visited the Pacific coast, but almost nothing was known about the land in between. The French owned the land from the Mississippi River to the Rocky Mountains. Spain controlled Texas, the Southwest, and California, and Great Britain controlled Canada.

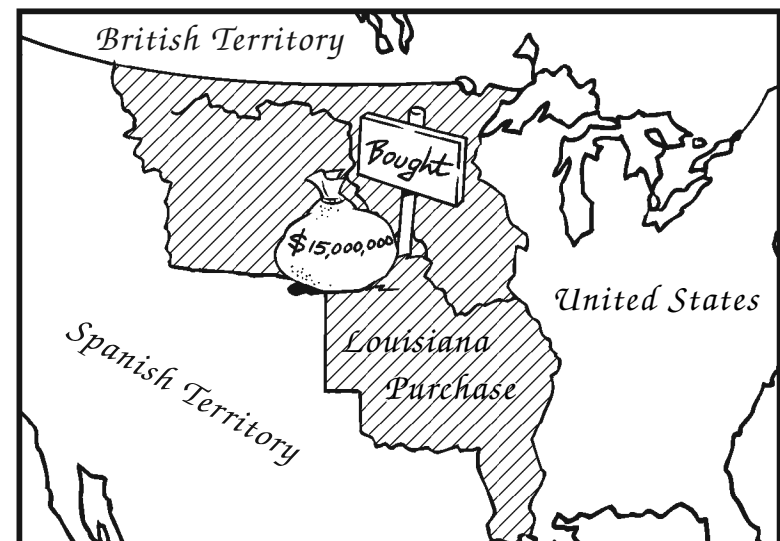
People in all of these countries believed that there might be a **Northwest Passage** across North America. They imagined the Northwest Passage

as an easy river-going route that would run from the Atlantic to the Pacific. Many people believed that if you sailed all the way up the Missouri River, it would be just a short hike to the top of the Columbia River, where you could sail to the Pacific.

Thomas Jefferson, the country's third president, believed that the United States needed to find and control the Northwest Passage if it was going to become a powerful nation. The Northwest Passage would be a great trading route between the nations of North America. Jefferson also loved science, geography, and learning about other cultures. He wanted to send an **expedition** up the Missouri River. The men would record the plant and animal life of the West, meet with the Native Americans there, and, Jefferson hoped, find the **fabled** Northwest Passage.

Congress set aside \$2500 for the expedition, and Jefferson chose his personal secretary, Captain Meriwether Lewis, to be its leader. Lewis was a close friend of Jefferson's, and Lewis had spent time in the army in western Pennsylvania and Ohio—which was then the western frontier. Lewis asked his friend William Clark to help him lead the expedition.

Just before Lewis and Clark were set to leave, Jefferson surprised the entire nation. In Europe, France was at war with Great Britain, and France was losing money fast. The French wanted to sell all of their land in North America. Jefferson bought all 820,000 square miles of land for \$15 million dollars—only three cents an acre. This deal, known as the Louisiana Purchase, almost doubled the size of the United States. Many people criticized Jefferson—after all, he had no idea what lay in the land he had just bought. Suddenly, Lewis and Clark's expedition had become much more important. They were now setting out to explore the newest part of the United States.



The shaded area shows the Louisiana Purchase.



Maps of the time showed strange legends about the West.

Preparation

In 1803, the year that Jefferson set the expedition in motion, crossing North America was as challenging and mysterious as traveling to the moon. No one knew what lay between the Mississippi and the Pacific Ocean—there were rumors that woolly mammoths still roamed the nation. Most Americans thought that the Native Americans were **hostile** and dangerous. Without cars, telephones, maps, or modern medicine, the journey was sure to be dangerous. Lewis and Clark were risking their lives. Luckily, Lewis was a thoughtful planner.

Lewis traveled to Philadelphia to learn mapmaking, navigation, plant- and animal-identification, and other necessary skills. He bought everything the explorers would need for the trip. He purchased tons of camping supplies, including hatchets, fishhooks, warm clothing, and material for tents. He also bought hundreds of pounds of dried corn, salted pork, flour, sugar, and 200 pounds of a dried soup mixture called “portable soup.” Even with all this food, Lewis and Clark knew that they would have to hunt to get enough to eat. Lewis bought rifles, bullets, and barrels of gunpowder. The barrels were made of lead, which could be melted and formed into bullets when the bullets ran out.

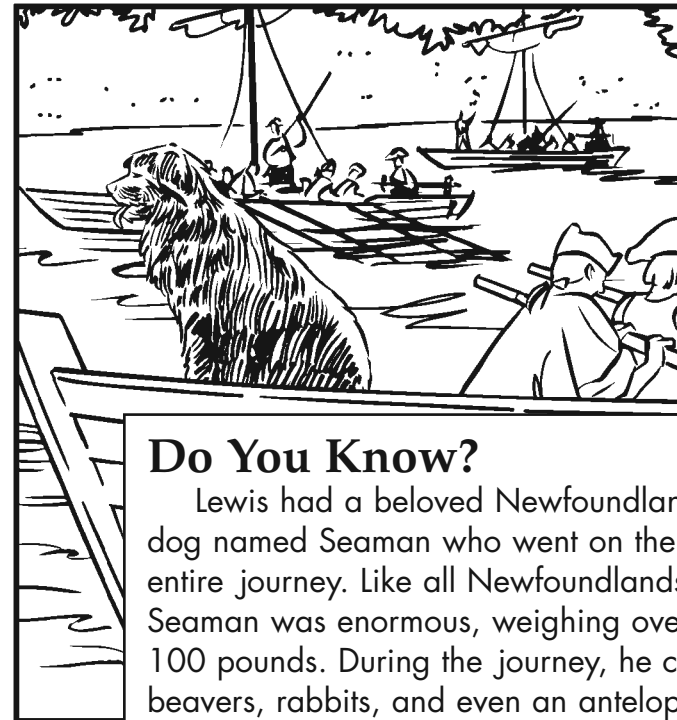


Lewis assembled a huge amount of supplies.

Lewis also bought hundreds of dollars worth of gifts to give to the Native Americans they would meet along the trip. He bought mirrors, sewing needles, combs, bright cloth, tobacco, and other hard-to-make goods. The gifts would show the Native Americans that the Lewis and Clark expedition came in peace. Lewis also arranged for three boats that would take them up the Missouri River. A 55-foot **keelboat** would carry men and their supplies, and two smaller canoe-like boats called **pirogues** (pih-ROGES) would be useful for scouting ahead.

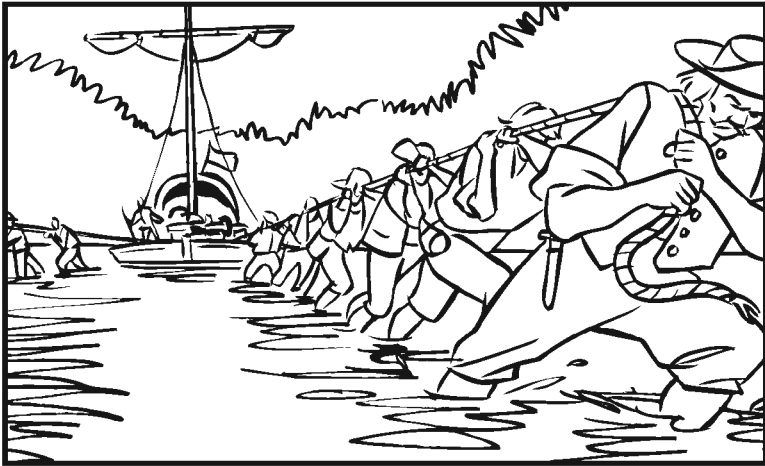
Lewis and Clark made sure that they chose the best people to make the trip with them. They chose mostly young men, many of whom had been in the army. Some were excellent at boating, while others were good hunters. They chose some men who knew how to fix rifles and some who could use iron to make horseshoes, axes, and other necessary tools. They also chose men who could speak Native American languages. One member of the team was William Clark's African-American slave, York. The 45 men who eventually set out on the journey became known as the Corps (KORE) of Discovery.

Lewis and Clark brought all of their supplies to St. Louis, near where the Missouri River joins the Mississippi. The Corps of Discovery rowed up the Mississippi to set up camp for the winter of 1803. There, on the edge of unknown land, the men trained for their journey, making sure that they worked well together both physically and mentally. After waiting out the winter, the Corps of Discovery finally set off up the Missouri River on May 14, 1804.



Do You Know?

Lewis had a beloved Newfoundland dog named Seaman who went on the entire journey. Like all Newfoundlands, Seaman was enormous, weighing over 100 pounds. During the journey, he caught beavers, rabbits, and even an antelope for the team to eat, and he guarded the expedition from bears and wolves.



Hauling the boats through mud was terrible work.

Going Upriver

The Missouri River has the nickname “Big Muddy,” and Lewis and Clark soon found out why. The river was wide, full of curves, and not very deep. It was often filled with floating wood and dead trees. The thick, muddy water made these hazards hard to see. The Corps was also moving against the strong current, so they went extremely slowly. When the water was deep enough, the men used poles, oars, or sails (if the wind was good) to move upstream. But the boats often got caught on the river bottom, forcing the men to get out and drag the boats along using ropes. If that were not enough, the soft, sandy banks of the river often collapsed suddenly—at one point, a collapse almost sank the keelboat.

The only thing the men had to drink was muddy river water, which often made them sick. Hard work gave them blisters, **boils**, upset stomachs, and muscle strains. Lewis had learned a little bit about medicine while he was in Philadelphia, but in 1804, medicine often did more harm than good. The men had no way to ease their pain or keep their wounds clean, and they were in constant discomfort. Every man who kept a journal wrote about the horrible mosquitoes. Sudden hailstorms cut and bruised the explorers. Wind and rain drove them back down the river. The adventure seemed more like a punishment.

After two months, the men had not made it out of the modern state of Missouri. As the summer wore on, one of the men, Sergeant Charles Floyd, grew ill. On August 20th, he died, probably of a ruptured appendix. The Corps buried him in what is now Sioux City, Iowa. Miraculously, he was the only member of the expedition to die on the trip.

Do You Know?

The mosquitoes on the Missouri River were so bad that the explorers smeared bear fat on their skin, trying to keep the insects away. Imagine how bad they smelled! Luckily, they had mosquito netting to sleep under at night.



Even in 1804, there were fewer buffalo than there had been before Columbus sailed.

Into the Plains

Eventually, the land around the Missouri River began to change. The hills gave way to broad plains. There were very few trees, except right along the riverbank. The men began to see immense herds of bison, sometimes numbering thousands of animals. President Jefferson had instructed all of the men to take note of any new plants and animals they discovered. The men described pronghorn antelope, jackrabbits, prairie dogs, and coyotes, all of which were unknown in the East.

The Lewis and Clark expedition had entered the Great Plains. At the time, these plains were one of the largest grasslands in the entire world. They must have looked much like the African Serengeti Plains you see in nature films today. They seemed endless, **uninhabited**, and filled with wildlife.

The men's journals were filled with descriptions of new discoveries, and the hunting was excellent. When they killed an animal, they preserved its skeleton and hide in a crate, which they planned to send back to President Jefferson in Washington.

But the plains were not uninhabited. Native Americans had been living and hunting there for thousands of years. Lewis and Clark's expedition did not see many of them at first, because many of the tribes were **nomadic**, or moved from place to place with no permanent home.

Eventually, the Corps of Discovery came into contact with representatives of the Missouri, Yankton Sioux, and Lakota tribes. Most Native Americans welcomed the explorers and accepted their gifts of peace. Many of them were fascinated by York, the African-American slave. Most Native Americans had seen or heard of white people, but they had never seen an African-American. One elderly Native American even rubbed York's skin, thinking he was a white man who had painted himself to trick them. York had fun with the attention. He played games with the children and showed off.

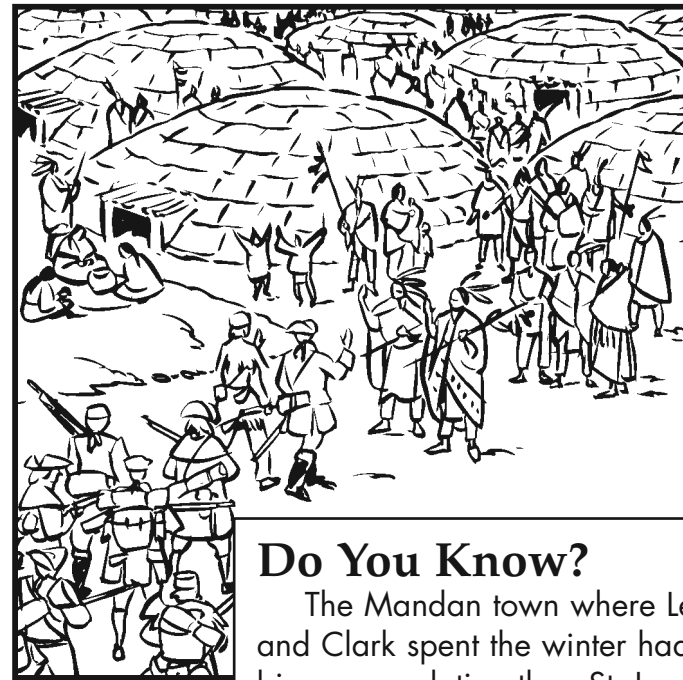
In September, the expedition met with the Lakota, an extremely powerful tribe that controlled most of the trade along the lower Missouri River. The Lakota did not like the idea that another nation now controlled their land and would soon be taking over the river. Lewis and Clark often made speeches to the Native Americans, calling them “children,” and saying that they had a new “great White father” in the east. The Lakota did not like being called “children.”

When Lewis and Clark sailed into Lakota territory in what is now South Dakota, there was tension in the air. The Lakota were not satisfied by Lewis and Clark’s gifts. Some of the Lakota grabbed hold of one of the pirogues. Lewis, who had a hot temper, got into an argument with the chiefs. But luckily, Clark, who was more even-tempered, and a Lakota chief, Black Buffalo, calmed everyone down. The expedition continued safely.



Lewis and Clark meet
Native Americans

As fall approached, the weather began to grow colder. Light snow began to fall as early as October, and flocks of geese filled the sky, heading south for the winter. The expedition came upon a town of Mandan Native Americans, who lived in sturdy **sod** houses. The Mandan were friendly and welcoming. Lewis and Clark realized that they would not reach the end of the Missouri River before winter. They decided that the Mandan town would be a good place to make camp until spring.



Do You Know?

The Mandan town where Lewis and Clark spent the winter had a bigger population than St. Louis or even Washington, D.C. at the time.



The men were not well prepared for snow and cold.

Spending the Winter

The Corps of Discovery built a sturdy fort near the Mandan town and made friends with the Native Americans. The explorers were lucky that they got along so well with the Native Americans, because the weather quickly turned harsh. Most of the men had grown up in Virginia, and they were totally unfamiliar with the difficult winters of the northern plains. They traded with the Native Americans to get food, tools, and warm bedding. Lewis also offered his medical skills to the Mandan. On one extremely cold February night, he was asked to help deliver a baby.

The woman who was giving birth was Sacagawea (SACK-ah-jah-WEE-ah), the wife of a French Canadian fur trapper. She was a member of the Shoshone tribe, who lived near the source of the Missouri River. Lewis thought that she could be an excellent guide and **interpreter** on their journey. The baby was born safely, and the mother and her infant son joined Lewis and Clark's Corps of Discovery.



Sacagawea and her son

The winter of 1804 and 1805 was very harsh. Food ran low. By springtime, the Corps of Discovery was eager to be on the move again. The Native Americans told them of a large waterfall not far upstream. Lewis and Clark believed that this waterfall was a signal that they were approaching the **Continental Divide**, where the rivers begin flowing west, toward the Pacific Ocean. The Corps of Discovery was sure that the Northwest Passage was not far off.

On April 7, 1805, the Corps of Discovery headed west once more with hope in their hearts.

To be continued in *The Story of Lewis and Clark, Book 2*

Explore More

❶ At the Library

Ask your librarian to help you find books on the Lewis and Clark expedition. You may even be able to find parts of Lewis and Clark's journals. Also check out the video section of the library for films about the Corps of Discovery.

❷ On the Internet

- In the address window, type *www.google.com*.
- Type *Lewis and Clark* in the search window and click on "Google Search."
- Read the colored links. Click on one that looks interesting. When you want to explore other links, click on the "Back" button at the top left.

❸ In the News

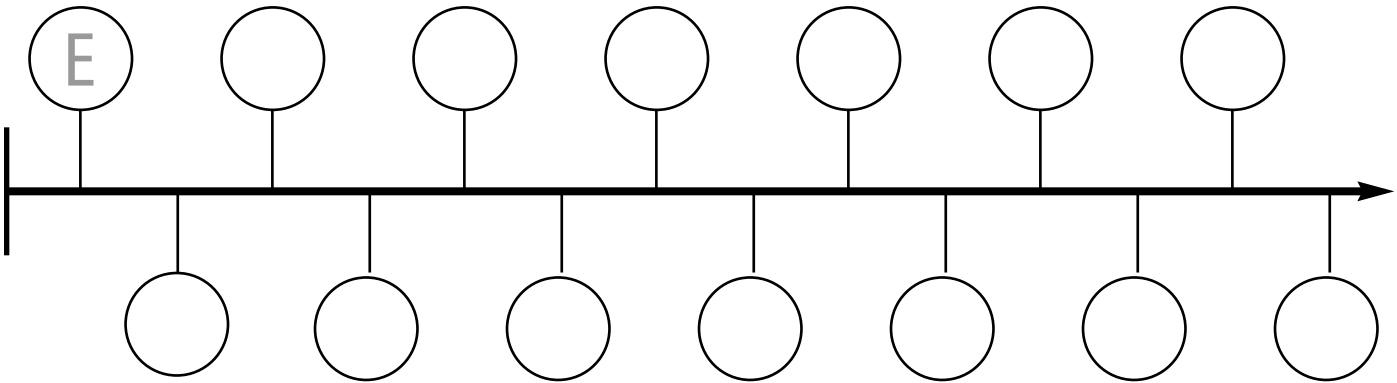
If you ever visit the western United States, you might get a chance to follow in Lewis and Clark's footsteps. Lewis and Clark's trail up the Missouri River and down the Columbia River is marked with signs and on maps. You can ride on the trail in your car, you can canoe up the river on a guided tour, and you can even hike the trail on foot. Signs and markers along the way tell you what the explorers did at different points along the route. Form your own Corps of Discovery!

Glossary

boils	red, sore spots where the skin is infected (p. 12)
Continental Divide	a line in North America; on one side, the rivers flow east into the Atlantic Ocean. On the other side, the rivers flow west into the Pacific Ocean (p. 18)
expedition	a journey or a voyage; also, a group of people who go on a journey or voyage (p. 5)
fabled	told about in stories and fables, but not proven to exist (p. 5)
hostile	very unfriendly (p. 7)
interpreter	a person who can translate one language into another (p. 18)
keelboat	a large boat with a long board, called a keel, along the bottom (p. 9)
nomadic	moving from place to place without a permanent home (p. 14)
Northwest Passage	an imaginary trade route across North America that went up the Missouri River and down the Columbia River (p. 4)
pirogues	canoe-like boats (p. 9)
sod	the tough top layer of soil that has grass roots in it (p. 16)
uninhabited	has no people living in it (p. 13)

Name _____

INSTRUCTIONS: Put the correct letter in each circle on the timeline to show when that event occurred.



- A The expedition settled for the winter of 1804 with the Mandan Native Americans.
- B Lewis went to Philadelphia to learn skills, choose a crew, and buy boats and supplies.
- C Sacagawea became a guide for Lewis and Clark.
- D The expedition arrived at the Great Plains.
- E President Jefferson chose Lewis to lead the expedition to find the Northwest Passage; Lewis asked Clark to join him.
- F The Corps of Discovery met members of three Native American tribes.
- G In April 1805, the Corps of Discovery headed west.
- H Jefferson made the Louisiana Purchase.
- I In 1803, Lewis and Clark took supplies to the point where the Missouri River joined the Mississippi River.
- J Lewis delivered Sacagawea's baby.
- K In 1803, the Corps of Discovery rowed up the Mississippi, set up camp, and trained for the expedition.
- L Insulted by Lewis and Clark's gifts and the idea that they would lose control of their land, the Lakota and Lewis nearly got into a fight. Clark and Black Buffalo stopped it.
- M In 1804, the Corps of Discovery started up the Missouri River.
- N Men and boats had a difficult time traveling up the muddy Missouri.

Name _____

INSTRUCTIONS: Circle the correct definition of the underlined word in each sentence. Then, on the line provided, write a sentence using the other meaning of the word. Keep in mind that some words may be spelled the same but pronounced differently.

1. William Clark helped Lewis lead the expedition.

a. to show the way to other people

b. a soft metal used in pencils

2. The trip up the Missouri River was difficult.

a. to fall over something

b. a journey

3. Lewis took lanterns to light the dark nights.

a. not weighing much

b. to make things visible

4. Lewis had a pet dog named Seaman.

a. a tame animal

b. to touch lightly

5. Muddy water, dead trees, and floating bark made it hard to travel on the Missouri River.

a. a sound made by a dog

b. the skin of a tree

6. The Mandan Native Americans were kind to Lewis and Clark.

a. a type or form of something

b. helpful

7. The story of Lewis and Clark is true.

a. one level of a building

b. a tale or explanation of what happened

8. The Lakota did not want another nation to control their land.

a. to touch down on the ground

b. the ground or territory used by a group or person

Name _____

INSTRUCTIONS: For each sentence, circle the adverb, underline the word it modifies, and then rewrite the sentence, putting the adverb in a different place in the sentence. Make sure that the adverb still modifies the same word.

1. France was quickly losing money in its war with Great Britain.

France was losing money quickly in its war with Great Britain.

2. Lewis thoughtfully planned every part of their journey.

3. The Corps had to work well together physically and mentally.

4. At first, the journey went slowly.

5. The banks of the river could suddenly collapse.

6. The Corps carefully approached the Lakota chiefs.

7. The expedition continued safely.

The Story of Lewis and Clark 2

A Reading A-Z Level Y Leveled Reader

Word Count: 1,998



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The Story of Lewis and Clark

Book 2: To the Pacific Ocean

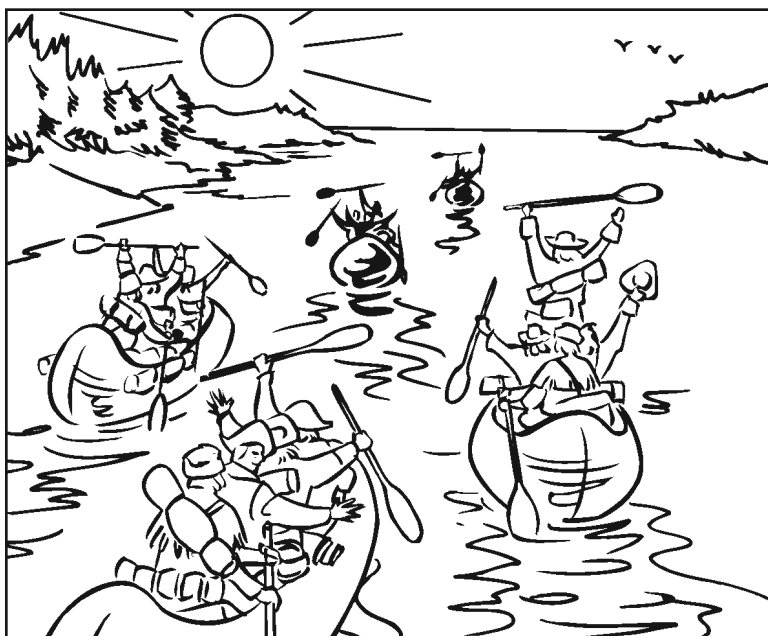


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Book 2: To the Pacific Ocean



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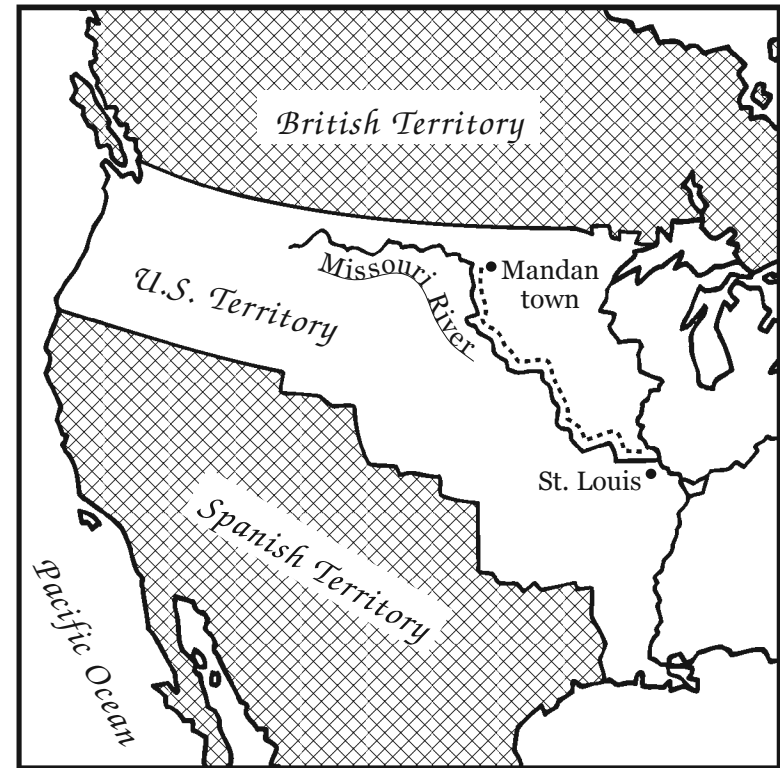
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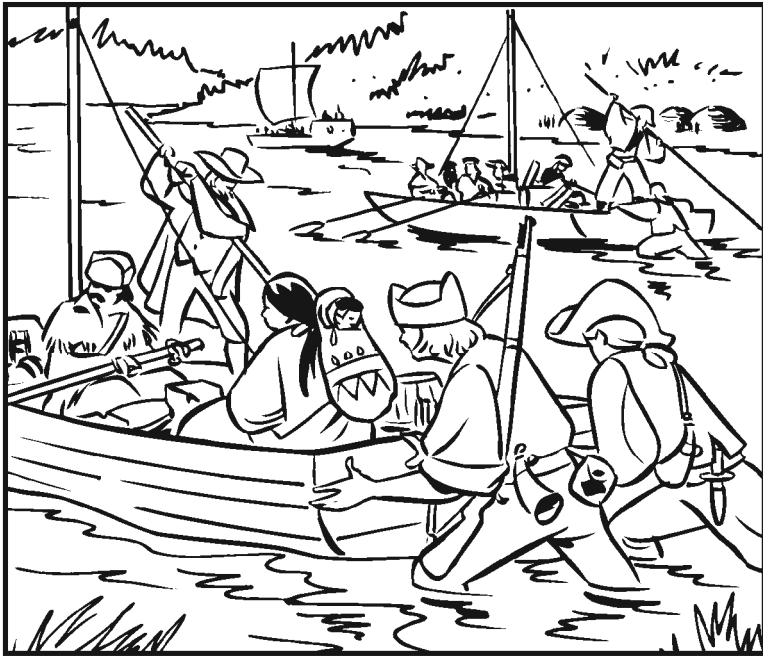
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The dotted line shows the Corps' journey through fall, 1804.

Introduction

On May 14, 1804, Captains Meriwether Lewis and William Clark headed up the Missouri River with their group, the **Corps** (KOR) of Discovery. They hoped to find an easy way to travel on rivers from the Atlantic Ocean to the Pacific. This route, called the **Northwest Passage**, would open up the vast new territory of the United States for traders and settlers.



Sacagawea and her infant son joined the journey.

By the spring of 1805, they had traveled 1,500 miles (2,400 km), met many Native American tribes, lost one explorer to illness, and spent a freezing winter in a fort they built themselves. Now, it was time to head out again. Over the winter, three new people joined the expedition: a French fur trapper, his young Shoshone (show-SHOW-nee) wife, Sacagawea (sack-a-ga-WEE-a), and their infant son, Jean-Baptiste, who Clark nicknamed "Little Pomp." On April 7, 1805, the Corps of Discovery launched its boats and headed west again.

The Fork and the Falls

The wildlife around the Missouri River continued to astound Lewis and Clark. Bison, elk, grizzly bears, and antelope covered the plains. The hunting was good; the explorers grew fond of roasted beaver tail while Sacagawea helped them find wild artichokes, turnips, berries, and herbs. Soon they saw beautiful limestone formations rising along the riverbanks. The team was sure it was coming close to the place where the Missouri River ended and the Columbia River began. Everything seemed to be going perfectly.

On June 2, the boats came to a fork in the river. None of the Native Americans had mentioned this fork, and nobody knew which way to take. Captain Lewis and Captain Clark split up, and each took a group to explore one branch of the river. Most of the explorers were sure that the north fork was the real Missouri. But the captains believed the south fork was correct. Captain Lewis took a second trip up the south fork, where he heard the roaring of a waterfall. The Native Americans had told him about the Great Falls of the Missouri River. Now he was sure the south fork was correct. Even though most of the team believed that Lewis and Clark were wrong, they followed their trusted leaders.



Hauling the boats was nearly impossible.

Lewis and Clark thought it would be easy to carry their boats and supplies around the falls. The group carved wooden wheels to help drag the boats. But they still had to cut a path through the thick cottonwood trees. The ground was covered with prickly pear cactus. The thorns pierced the team's **moccasins**. One man was bitten by a rattlesnake, and everyone was tortured by the mosquitoes. Lewis had thought it would only take them a few hours to get around the falls. It took them almost a month.

Finally, they could float their boats on the river again. Sacagawea began to recognize the territory of her Shoshone tribe. Lewis and Clark both believed they would soon find the Columbia River, which led west to the Pacific Ocean.

The river forked into three branches, and the Corps of Discovery took the west branch. It was only a small creek now. A Native American trail ran alongside the creek and up a ridge. Lewis leapt onto the trail. He was sure that at the top, he would see the Columbia River, and possibly even a great plain leading to the Pacific Ocean. Finally, he reached the top of the ridge.



Lewis's first view of the Rocky Mountains

What he saw astounded him—there was no river, no great plain, and certainly no Pacific Ocean. Instead, he saw mountains. The mountains were taller, wider, and more **impassable** than any mountains he had ever seen. Even though it was early summer, the peaks shone with snow. These were the enormous Rocky Mountains. In that instant, Lewis knew that there was no Northwest Passage. But still, he was determined to find a way to the Pacific Ocean, whether it was easy or not.

Over the Mountains

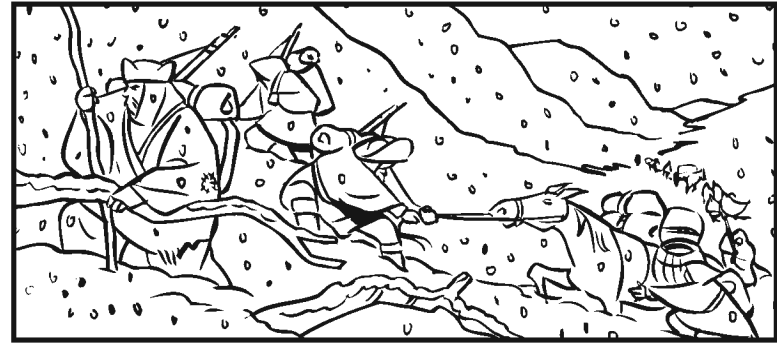
Lewis and Clark knew that they would not be able to take the boats over the Rocky Mountains. Instead, they hoped that the Shoshone, Sacagawea's people, would sell them horses. Sacagawea would be their **interpreter** and would help convince the tribe to sell their horses for the dangerous journey.

Sacagawea was overjoyed to see her tribe again. Another tribe had kidnapped her and sold her to her French-Canadian husband when she was only twelve. She had not seen her friends and relatives in years.

Lewis, Clark, and Sacagawea sat down to speak with the chief of the village. Suddenly, Sacagawea leapt up and embraced the chief, sobbing. The chief was her own brother. The Shoshone agreed to sell the expedition all the horses they needed. They also offered a guide, who Lewis and Clark nicknamed Old Toby.



Sacagawea happily reunited with her brother.



The mountains proved more difficult than anyone had imagined.

The mountains were tougher than Lewis and Clark ever imagined. The slopes were steep and slippery with ice and snow. Men and horses fell and injured themselves. Old Toby could not find the trail among the snowdrifts and fallen trees. Each time they came to a ridge, they saw only more mountains. Food was becoming scarce, and the team was showing signs of **malnutrition**. Finally, they decided that they had to shoot and eat a horse in order to survive.

The members of the Corps of Discovery were nearly dead when they finally found their way out of the mountains. They arrived in a Nez Perce Native American village. The Native Americans gave them food and helped them build canoes to travel down the rivers, which now flowed west, to the Pacific. They were finally on the last leg of their journey.

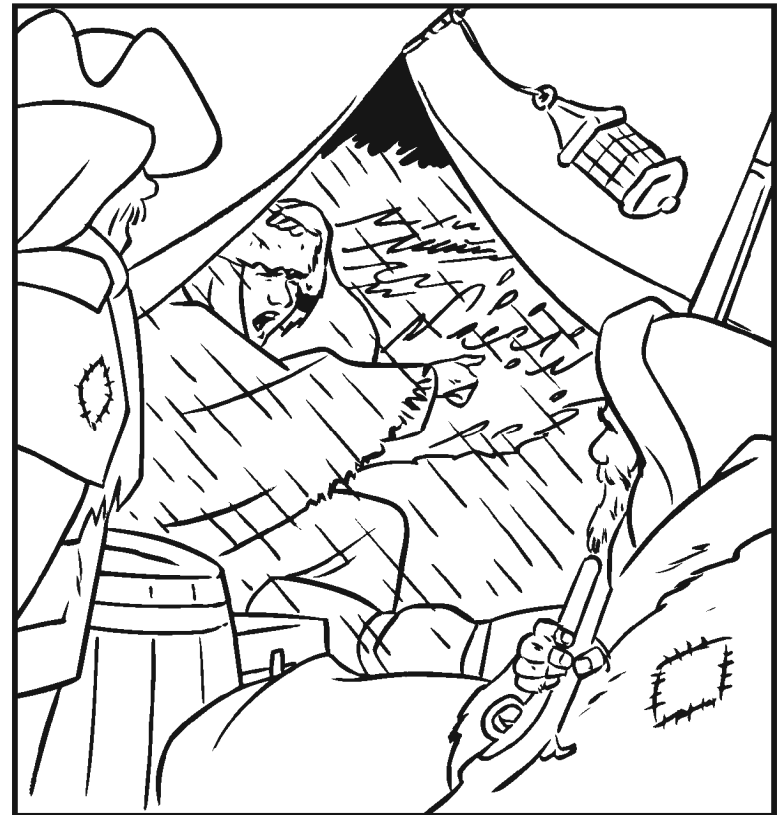
The Pacific

The Corps of Discovery traveled quickly, now that it was going with the current instead of against it. There were many rapids and waterfalls. Sometimes the explorers were in such a hurry that they simply floated down the rapids, hoping to survive. The high, dry plains suddenly changed to the cool rainforests of the Cascade Mountains.



The current allowed the Corps to move west quickly.

They were getting closer to the sea—the river began to taste salty and to rise and fall with the tides. The entire group was eager to see the ocean. But just as it seemed that Lewis and Clark's group would reach the Pacific, a fierce storm blew in. Cold rain and huge waves soaked the Corps. Once they even had to move their camp in the middle of the night so they would not be washed away by the waves.



Storms threatened to wash away the explorers.



The Pacific Ocean at last

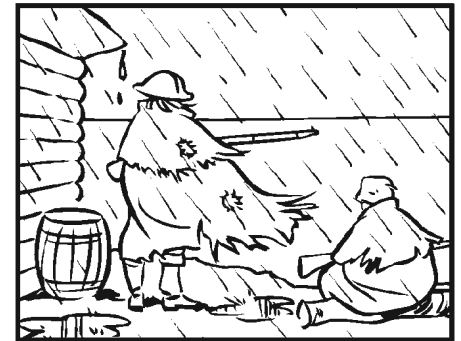
When the weather improved, the Corps continued down the river. At last, they saw waves, a beach, and a horizon of water. "Ocean in view," Clark, who was a terrible speller, wrote in his journal. "O! The joy!" The Corps of Discovery had made it to the Pacific Ocean.

Winter on the Coast

The weather was beginning to turn cold, and Lewis and Clark needed a place to spend the winter. They were currently camped on the north bank of the Columbia River. The Native Americans had told the group that the south bank was better. The leaders decided to let the Corps of Discovery vote. Each member had a vote, including the African-American slave, York, and Sacagawea. This was decades before either African-Americans or women could legally vote in the United States. The group voted to move to the south bank.

The Corps built a fort they named Fort Clatsop, after the Native American tribe that lived there. The winter was wet, cold, and miserable. It rained almost every day, the food was bad, and many of the men were homesick.

Thomas Jefferson had promised that if the Corps of Discovery saw any ships on the Pacific, it could ask for a ride home, and the government would pay. But no ships appeared.



The Pacific Northwest is famous for rain even today.



One of the explorers' tasks was to boil seawater to make salt.

The team spent its time preparing to go home and tell the world what it had done and seen. All the men filled in their journals, adding information about the weather, the land, the people, and the wildlife. Clark, who turned out to be a natural mapmaker, drew a map of the territory they had crossed. Other men repaired equipment and prepared supplies for the journey.

By the time spring arrived, the explorers were eager to be moving again. On March 23, 1806, they began traveling east, up the Columbia River.

Heading Home

Canoeing up the Columbia River was very difficult, and the Corps of Discovery soon traded its canoes for horses. They eventually reached the Nez Perce village where they had stumbled out of the mountains. The mountains were still covered with snow, and the group chose to wait for warmer weather rather than risk death again. But after a month, they grew impatient and tried to cross the peaks. They found themselves struggling through 12-foot snowdrifts, even though it was mid-June. They turned back.

After another week of waiting, they tried again. It was still difficult, but they succeeded with the help of some Nez Perce guides.



Even in summer, the rugged Bitterroot Mountains are snowy.

From then on, the Corps would be going with the river, over territory they had crossed before. Lewis and Clark decided that they had time to split up and explore. Clark, Sacagawea, and many members of the Corps headed toward the Yellowstone River, where they had left their boats the summer before.

Lewis and a group of nine men went north, coming close to what is now the Canadian border.

On July 25, while Lewis and his group slept, a band of Blackfoot Native Americans tried to take their horses and guns. Most of the Native Americans ran off when the men awoke. But one man stabbed a Native American, and Lewis shot and killed another.



The raid and shooting

This was the only violence between the Corps of Discovery and any of the Native Americans they met. Lewis and his group hurried on to where the Missouri River met the Yellowstone River. There they met part of Clark's party at a place they named Reunion Point. The group hurried on by canoe.

Do You Know?

On the return trip, Lewis went hunting with a member of the Corps, Pierre Cruzatte. Suddenly, Lewis was shot in the back of the thigh. Lewis assumed that it was the Blackfoot Native Americans, but it turned out to be Cruzatte. Cruzatte had only one eye, and he had mistaken Lewis for an elk.

They all soon arrived at the Mandan Native American town where they had spent their first winter. They said goodbye to Sacagawea, her husband, and Jean-Baptiste, who were staying in the village. Another member of the Corps, John Colter, also decided to leave the expedition to join a group of fur trappers.



Sacagawea's son later lived with Clark to attend school.

The rest of the expedition continued down the river toward home. They went swiftly, encountering many fur trappers, settlers, and explorers who were following in the expedition's footsteps. At last, they reached St. Louis on September 23, 1806. The Corps of Discovery was overjoyed, and so were the people of St. Louis. Many people had assumed that the explorers had died along the journey.

<i>Jefferson picks Lewis to head exploration team</i>	<i>April 1803</i>
<i>Louisiana Purchase</i>	<i>July 4, 1803</i>
<i>Corps of Discovery sets out</i>	<i>May 14, 1804</i>
<i>Sgt. Charles Floyd dies</i>	<i>August 20, 1804</i>
<i>Corps reaches Mandan town</i>	<i>October 24, 1804</i>
<i>Leaves Mandan town</i>	<i>April 7, 1805</i>
<i>Reaches Great Falls of Missouri</i>	<i>June 13, 1805</i>
<i>Reaches Rocky Mountains</i>	<i>August 31, 1805</i>
<i>Finishes crossing Rocky Mountains</i>	<i>Sep. 22, 1805</i>
<i>Corps sights Pacific Ocean</i>	<i>Nov. 7, 1805</i>
<i>Begins return journey</i>	<i>March 23, 1806</i>
<i>Returns to Nez Perce</i>	<i>May 28, 1806</i>
<i>The Corps splits up</i>	<i>July 3, 1806</i>
<i>Joins again at Reunion Point</i>	<i>August 12, 1806</i>
<i>Reaches Mandan town again</i>	<i>August 14, 1806</i>
<i>Returns to St. Louis</i>	<i>Sep. 23, 1806</i>



Jefferson was extremely proud of the Corps' accomplishments.

The Effects of the Expedition

Lewis and Clark went to Washington, D.C. to visit President Jefferson and present him with the results of their journey. Jefferson was disappointed that there was no Northwest Passage, but he was delighted with what Lewis and Clark had done. He carefully studied their new map. He took the animal hides, horns, and skeletons they had collected and displayed them in the White House. He especially enjoyed the live groundhog that the Corps had shipped to him.

Captain Lewis was named the governor of the new Louisiana Territory. But Lewis was unhappy in his role. He had financial trouble, and many people noticed that he seemed moody and sad. In 1809, he headed toward Washington, D.C. in hopes that Jefferson could help him with his problems. On his way there on October 11, he committed suicide with his pistol.

Captain Clark settled in St. Louis, where he had a career in public service, which included serving as the Superintendent of Indian Affairs. He always tried to help the Native Americans who had helped him on his expedition.



Clark went on to a successful career.



Lewis and Clark Memorial Park in North Dakota

Lewis and Clark's story has been told in hundreds of books, movies, and poems. Everything from schools to motels have been named after the two men. But the most important effect of Lewis and Clark's journey was that they opened the American West to settlers, explorers, **prospectors**, and adventurers. They paved the way for the American farms, factories, and cities that we know today. After the Lewis and Clark expedition, the American West was never the same.

Explore More

At the Library

Ask your librarian to help you find books on the Lewis and Clark expedition. You may even be able to find parts of Lewis and Clark's journals. Also check out the video section of the library for films about the Corps of Discovery.

On the Internet

- A. In the address window, type *www.google.com*.
- B. Type *Lewis and Clark* in the search window and click on "Google Search."
- C. Read the colored links. Click on one that looks interesting. When you want to explore other links, click on the "Back" button at the top left.

On Land

If you ever visit the western United States, you might get a chance to follow in Lewis and Clark's footsteps. Lewis and Clark's camps and trails in the Pacific Northwest are marked on maps. You can even visit recreations of the forts and view the Pacific Ocean from where the expedition first spotted it. Form your own Corps of Discovery!

Glossary

corps	a group of workers or soldiers (p. 4)
impassable	impossible to get through (p. 8)
interpreter	a person who translates from one language to another (p. 9)
malnutrition	a disease brought on by not getting enough nutrients (p. 10)
moccasins	soft leather shoes often worn by Native Americans (p. 7)
Northwest Passage	an imaginary trade route across North America that went up the Missouri River and down the Columbia River (p. 4)
prospectors	people who search for gold, silver, or other precious minerals (p. 22)

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Name _____

INSTRUCTIONS: Reread the page on which each sentence appears. Use the clues below to help you choose the conclusion that best explains each sentence. Write your own conclusion for the last one.

Page 11: Sometimes the explorers were in such a hurry that they simply floated down the rapids, hoping to survive.

A logical conclusion is that:

- A. the men liked the thrill of the rapids.
- B. the mosquitoes were bad.
- C. the Native Americans were unfriendly.
- D. the men were anxious to see the Pacific Ocean.

Page 14: The leaders decided to let the Corps of Discovery vote. Each member had a vote, including the African-American slave, York, and Sacagawea.

A logical conclusion is that:

- A. Lewis and Clark were afraid of York and Sacagawea.
- B. Lewis and Clark respected all of the people traveling with them.
- C. Sacagawea refused to help unless she could vote.
- D. York did not want to vote.

Page 14: Thomas Jefferson had promised that if the Corps of Discovery saw any ships on the Pacific, it could ask for a ride home, and the government would pay. But no ships appeared.

A logical conclusion is that:

- A. no ships came that way during the winter.
- B. the men did not have binoculars.
- C. the ships were damaged in storms.
- D. President Jefferson changed his mind.

Page 17: This was the only violence between the Corps of Discovery and any of the Native Americans they met.

A logical conclusion is that: _____

Name _____

INSTRUCTIONS: Make an X beside each compound sentence. Then, for each compound sentence, underline each of the simple sentences and circle the connecting word. At the bottom of the page, write a compound sentence.

- _____ 1. Captain Lewis and Captain Clark split up, and each took a group to explore one branch of the river.
- _____ 2. Lewis and Clark both believed they would soon find the Columbia River.
- _____ 3. The river forked into three branches, and the Corps of Discovery took the west branch.
- _____ 4. The mountains were tall, wide, and impassable.
- _____ 5. Sacagawea was overjoyed to see her tribe after having been kidnapped when she was only twelve years old.
- _____ 6. The group was eager to see the Pacific Ocean, but a fierce wind blew in that soaked the Corps.
- _____ 7. At last, they saw waves, a beach, and a horizon of water.
- _____ 8. The weather was beginning to turn cold, and Lewis and Clark needed a place to spend the winter.
- _____ 9. The team members spent their time preparing to go home to tell the world what they had seen.
- _____ 10. It was still difficult, but they succeeded with the help of some Nez Perce guides.

My sentence:

Name _____

INSTRUCTIONS: Write a homonym (a word that sounds the same but is spelled differently) for each word below. Then underline the correct word in the sentences below.

1. new _____

5. blew _____

2. plain _____

6. wait _____

3. peak _____

7. one _____

4. sea _____

8. two _____

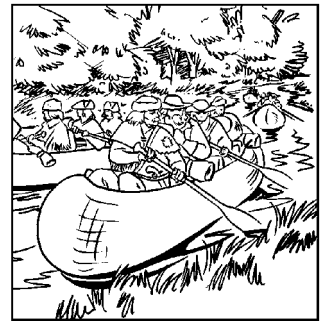
1. Lewis and Clark were sure they would find the Northwest Passage (their, there).

2. Sacagawea was (they're, their) interpreter.

3. They left (their, there) fort in the spring of 1805.

4. (They're, Their) amazed by the many types of wildlife.

5. Lewis and Clark weren't sure of (their, they're) route.



6. (Their, There) were rattlesnakes, mosquitoes, and cactus near the falls.

7. Lewis believes (their, they're) nearing the Pacific Ocean.

8. (Their, They're) friends were overjoyed when Lewis and Clark returned.

9. President Jefferson carefully studied (there, their) map.

10. Captain Lewis no longer wanted to live (there, their).

Catching Air

A Reading A-Z Level Y Leveled Reader

Word Count: 2,157



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Skydivers jump from an airplane

Air and Flight

Look, up in the sky! Is it a bird? A plane? Superman? No, it's a regular person flying high, or "catching air," while hang gliding, skydiving, or parasailing. Maybe you'd like to try one of these wind-powered sports, and soar and swoop through the wild blue yonder. All you need is the right equipment, a sense of adventure, and an understanding of how wind works.

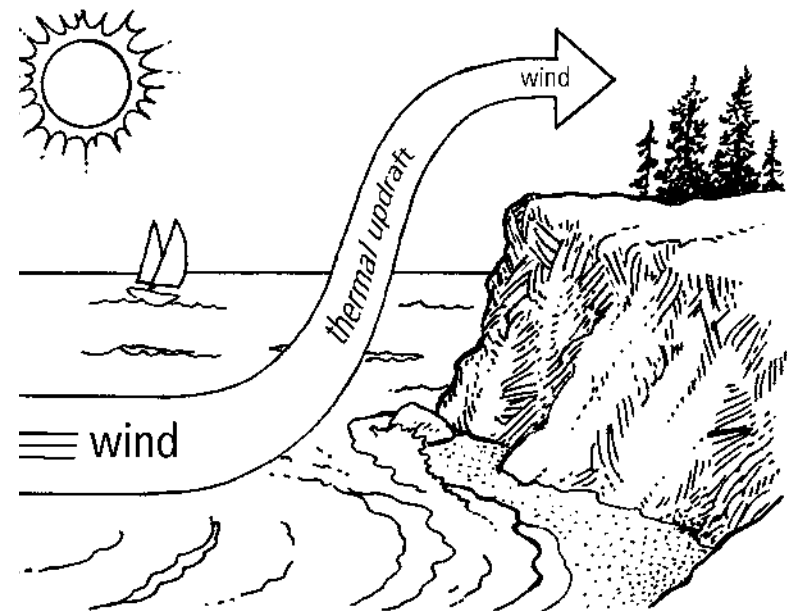
First, let's look at air. The air surrounding Earth is called the **atmosphere**. You can't exactly see air, which is a collection of gases, and you can't really feel it unless it is moving. But air has weight and takes up space (volume). When air heats up, it becomes lighter and rises. Air is set in motion when cooler, heavier air moves in to replace warmer, lighter air that is rising. The moving air is called wind.



The air inside a hot air balloon is hotter than the air outside, which causes the balloon to rise.

Wind-sport enthusiasts use their knowledge of nature to power their flights. Areas of land, such as cliffs, heat up faster than water. Colder air over the sea moves in to replace the warmer air rising up from the land. As wind strikes the side of a cliff, it is reflected upward. This updraft, or rising current of air, is called **lift**.

Sometimes, wind-sporters look to the real experts on flying—birds—for advice. Hawks or seagulls circling overhead without flapping their wings signal a rising column of air called a **thermal**. Wind-sporters will try to catch one for a ride.



Wind-sporters catch updrafts to give them a boost into the sky.



A hang glider's harness keeps her body in a straight line to cut down on wind resistance.

Hang Gliding

The hot summer sun sits high in the mid-afternoon sky. A gentle breeze blows in from the sea. A man with an arrow-shaped, winged contraption on his shoulders runs down a slope and leaps from the cliffs rising about 914 meters (3,000 ft.) above the shore. Yikes! Is he a goner? No, the wing fills with air, billows out, and up he goes! The pilot dangles, or hangs, from a cocoon-like harness attached to the wing, then pulls back on a metal rod called the control bar. The edge of the wing tips down; the man and machine glide forward through the air.

He is hang gliding. And he may stay up for hours if the conditions are good—and if he knows a few laws of **aerodynamics** (airo-die-NAM-iks), the study of how objects move through the air.

Try This

Creating Lift

1. Get a sheet of letter-size paper.
2. Hold the edge in front of your mouth to the top of your bottom lip. The paper should curve down.
3. Blow sharply over the top of the paper.
4. The paper rises because the fast-moving air on the top reduces the downward pressure. The greater air pressure below pushes it up.



Gravity will pull the hang glider down if it **stalls**, or stops moving forward. But when the glider moves forward, the air rushing over the top presses down less than the air on the underside of the wing. The wing rises.

The **streamlined** design of the wing helps produce lift. The air moving over the curved section of the wing must travel a greater distance than the air rushing beneath the flat underside of the wing. The air moving over the top has to move faster to catch up with the air beneath the wing. That reduces the downward pressure of the air pushing on the top of the wing. The greater **air pressure** on the bottom of the wing pushes it up.

How to Hang Glide

To take off, the pilot runs down a slope to create airflow over the wing. When the air speed reaches around 32 kph (20 mph), the pilot pushes off with his legs, full force, into the wind. The wing fills with air and generates lift.

The pilot lies in a prone (horizontal) position or sits in a swing seat attached to the wing. The pilot steers by moving his body in the desired direction, left or right. Push the control bar forward and the front edge of the wing tips down. The glider gains speed, but loses **altitude**, or height. (For every 1.22 meters, or about 4 feet, the glider moves forward, it drops about 30 centimeters, or 1 foot.) Pull the control bar back and the wing edge tips up. The glider rises, but loses speed.



These hang gliders are flying together. This is called tandem flight.

What It Takes

Equipment: Harness, helmet, goggles, parachute, glider, and flotation gear if near water.

Clothing: A heavy jacket, jeans, and gloves. It can get very cold at high altitudes.

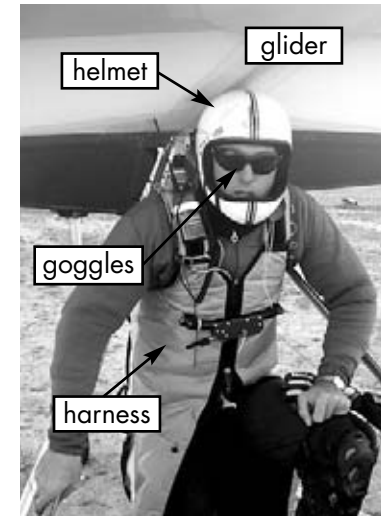
(Air temperature falls by about 2.2 degrees Celsius, or 4 degrees Fahrenheit, about every 300 meters, or 1,000 feet, up.)

Size: Harnesses are designed to fit a person who is 1.5 to 2 meters (5 to 6-1/2 ft.) tall and weighs 40 to 113 kilograms (90 to 250 lbs.)

Skills: Able to carry an 18-plus kilogram (40 lb.) weight on your shoulders while jogging. But balance and endurance are more important than strength or speed. Good reflexes and an ability to make fast decisions are a must.

Requirements: Sixteen or older. Pass a three- to six-month training course.

Cost: \$5,000 to train and purchase hang-gliding equipment.



The Story of Icarus

People have been fascinated by flying for thousands of years. A Greek myth tells of the inventor Daedalus (DAYD-l-us) and his son, Icarus, imprisoned on an island. Their only way out: to fly. So Daedalus fashioned wings for himself and his son from feathers held together by wax. They escaped! But Icarus ignored his father's warning and flew too high in the sky. The heat of the sun melted the wax, and Icarus fell to the sea and drowned.

Icarus is a good story but not good science. People could never flap their winged arms fast enough to generate sufficient power to overcome the pull of gravity.

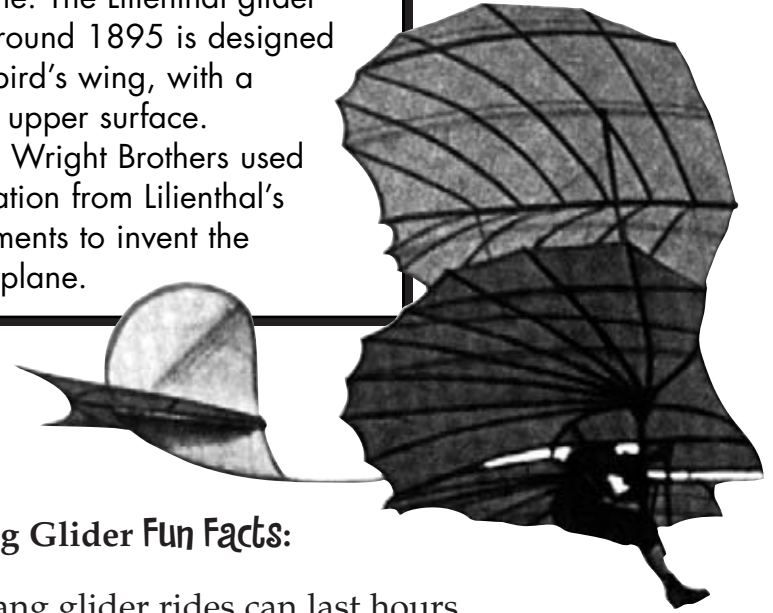


Do You Know?

In the 1800s, German inventor Otto Lilienthal discovered that a properly engineered wing would help a person stay aloft for hours at a time. The Lilienthal glider from around 1895 is designed like a bird's wing, with a curved upper surface.

The Wright Brothers used information from Lilienthal's experiments to invent the first airplane.

Lilienthal's glider



Hang Glider Fun Facts:

- Hang glider rides can last hours. The longest on record is 36 hours.
- Hang gliders typically travel 160 to 320 kilometers (100 to 200 miles). The farthest flight on record is just more than 700 kilometers (435 miles), which was set July 17, 2001, in Zapatz, Texas, by Austrian Manfred Ruhme.
- Flight heights can range from as low as 1.5 meters (5 ft.) above the ground to more than 4.8 kilometers (3 miles) high!

Skydiving

A small plane buzzes overhead. At an altitude of 3,048 meters (10,000 ft.) the passenger door opens. A person crouching in the doorframe leaps out, arms and legs spread wide. Within 10 seconds, the skydiver is **freefalling** at 193 kph (120 mph). That's twice as fast as a car zooming by on a highway.

You watch, astonished, as the skydiver sharply drops . . . and drops . . . and DROPS for the next 45 seconds. *Release the parachute! Release the chute!* you think.



Skydiver prepares to land.

Finally, at about 762 meters (2,500 ft.) above the ground, he pulls the ripcord. Out comes the small **drogue** chute that pulls out the **canopy**, or larger chute. It fills with air and the skydiver is jerked upward. He continues to fall, but now at a leisurely 16 to 20 kph (10–20 mph). For the next three minutes he enjoys the view and the ride before landing in a clearing.

Try This

Buttons Away!

What you need: Four-holed button. Four strands of thread, each 15" long. Scissors. Plastic bag. Tape.

What you do:

1. Cut a 20-centimeter (8 in.) square from the plastic bag.
2. Tape one end of each strand of thread to a corner of the plastic.
3. Thread each strand through a different hole in the large button.
4. Tie the threads together.
5. Gently hold, or pinch, the top side of the plastic in its center, and let the button dangle.
6. Drop your homemade parachute from a high spot, such as off the side of a deck.
7. Watch the button glide to the ground.



How a Parachute Works

Gravity pulls the skydiver down at speeds of 193 kph (120 mph) or more. When the parachute opens, it fills with air, and speed slows. Air trapped in the canopy (the "umbrella" part) compresses, or squashes together. It presses up against the chute, providing **resistance** to the force of gravity. The skydiver glides to Earth.

What It Takes

Equipment: Jumpsuit, helmet, goggles, parachute, reserve chute, harness with attached backpack that holds both. An automatic activation device opens the reserve chute if something goes wrong.

Skills: Have enough strength to carry about 16 kilograms (35 lbs.) of equipment and control the toggle switches that steer the chute. Be able to deal with the shock of the chute opening, as well as extreme changes in temperature.



Size: Harnesses are designed to fit a person who is 1.5 to 2 meters (5 to 6-1/2 ft.) tall and weighs 40 to 113 kilograms (90–250 lbs.)

Requirements: Sixteen years old and in good shape. Pass eight training levels, including many jumps with instructors. A student must make 20 solo jumps and pass a written test.

Cost: \$2,000, plus \$1,000–\$4,000 to buy equipment.



A diamond formation

Spread-eagle position

Skydivers hold arms and legs outstretched in the “spread-eagle” position to keep from tumbling during freefall. The increased resistance of the body to the air causes the skydiver to float. To increase freefall speed to 257 kph (160 mph) or more, skydivers learn to fall in a standing position.

Now that you know how to skydive, what’s next? Experienced skydivers, or sport parachutists, compete in such events as landing accuracy, freefall speed, and freestyle. They put on shows and do stunts in the air, such as passing a baton to each other or jumping as a group to create formations in the sky.

BASE Jumping

If skydiving from a plane doesn't get your pulse racing, how about parachuting from a tall **B**uilding, **A**ntenna tower, bridge **S**pan, or cliff high above the **E**arth? Welcome to the sport of BASE jumping.

Most BASE jumps are made from around 305 meters (1,000 ft.) high, which is considerably less than the point where skydivers open their parachutes. BASE jumpers have just 20–30 seconds in the air to open their chutes and land in a small safety zone. Crazy? Maybe. But only expert skydivers with a minimum of 200 jumps can attempt such daredevil feats, and many places that could be used for BASE jumping have made it illegal because of the danger.



A BASE jumper leaps from a cliff.

Skydiving Fun Facts:

- *Whuffo* is skydiver slang for a non-jumper. It comes from the often-asked question (by non-jumpers), “Whuffo you jump outta planes?”



- Expert skydivers can land on a target that is about the size of a tennis ball.

- The highest, longest, and fastest skydive on record occurred in 1960, when U.S. Air Force Captain Joseph Kittinger Jr. jumped from a hot-air balloon about 32 kilometers, or 102,800 feet (nearly 20 miles!) high.



During 4 minutes and 36 seconds, he reached speeds of over 965 kph, or 600 mph.

Parasailing

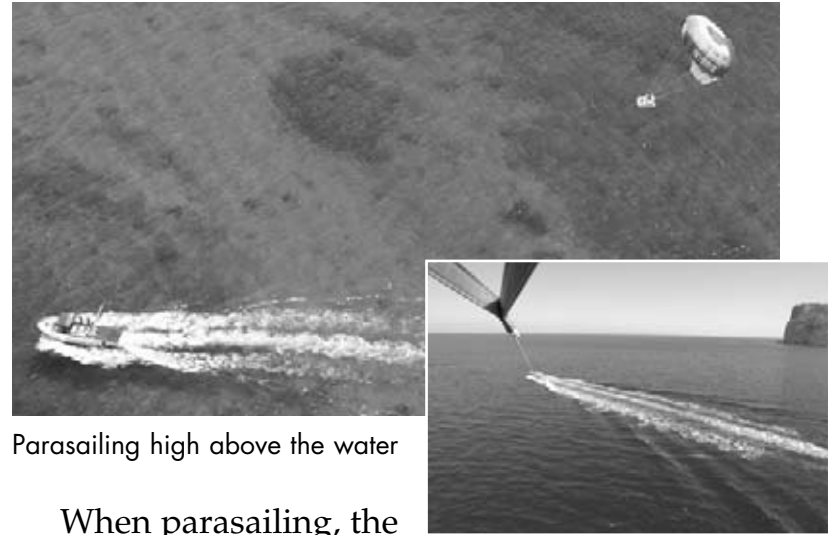
A 10-year-old girl standing on shore straps a harness over her life jacket. She adjusts her helmet and gives the driver of the speedboat the “thumbs-up” signal. The motor roars, the boat scoots forward, and the towrope connecting the girl to the boat tightens. She takes a few steps and begins to glide on the water. Is she water-skiing without skis?

No, she is enjoying the sport of parasailing. As the boat bolts into the bay, the colorful parachute dragging behind her fills with air. The girl rises like a human kite, 61 meters (200 ft.) into the sky.

The boat moving forward provides **thrust**, the power to take off. The air rushing into the parachute provides lift. As long as the towline stays tight, the flyer sits back and enjoys the ride—and the admiration of all those watching from the ground.



A parasailor takes off.



Parasailing high above the water

When parasailing, the speedboat cruises between 24 and 48 kph (15–30 mph). It needs to go fast enough to create lift but not so fast that a wave will make it lose control. When turning, or if a strong gust of wind blows from behind, the boat needs to speed up. Slack in the towline will cause the parasail to fall. Parasailing is not recommended when the wind is blowing stronger than 24 kph (15 mph).

The height a flyer reaches depends on the speed of the boat and length of the towline. On average, recreational parasailors reach the height of a 20-story building; maximum height over oceans is 183 meters (600 ft.) and 91 meters (300 ft.) over large lakes and bays. Some special-attraction parasail rides can go as high as 305 meters (1,000 ft).

Unlike hang gliding and skydiving, parasailing has no minimum age requirement. There is no special training for the parasailor, though the boat driver needs to have experience. There are many ways to parasail. Strap on a harness or sit in a specially designed chair. Ride alone or with a friend. Parasailing is usually done on oceans, lakes, and bays. Flyers take off from the shore from a barge in the water, or from a boat equipped with a **winch**. Rides from commercial parasailing companies typically last around 10 minutes and can cost \$50 or more. A basic parasail, plus accessories, can cost \$1,000 and up.



Paragliders can stay in the air for hours at a time and travel great distances.

Parasailing History

1918 • Developed during WWI. A German U-boat (submarine) captain wanted to be able to see above the fog when his boat surfaced.

1948 • Dr. Francis Rogallo developed what he called a Delta kite, the basis for the kind of parachute used in parasailing.

1960s • Parascending was invented, an inexpensive way to teach parachuting. A parachuter and towline were attached to a car driven fast enough to raise the parachuter to 305 meters (1,000 ft.) before being set free.

1970s • Parasailing became a recreational activity.



Paragliding

Want to try three wind sports at once? Then try paragliding. It combines parasailing, hang gliding, and parachuting. Paragliders wear a wing-shaped parachute. They take off from a high point, like BASE jumpers and skydivers, or get a boost into the air like parasailors. Paragliders compete to see who can cover the greatest distance. Sometimes, they race against the clock while following a specific, airborne course. They take photos of reference points along the way to prove they passed a designated spot.

Glossary

aerodynamics	the study of how objects move through the air (p. 7)
air pressure	force of the gases that make up air combined with gravity (p. 8)
altitude	height (p. 9)
atmosphere	the air surrounding the Earth (p. 5)
canopy	large parachute that slows fall to earth (p. 13)
drogue	small parachute that pulls out the canopy (p. 13)
freefall	to fall rapidly through the air (p. 13)
lift	updraft, or rising current of air (p. 6)
resistance	force that slows motion (p. 14)
stalls	stops moving forward (p. 8)
streamlined	designed to move easily through air (p. 8)
thermal	rising column of air (p. 6)
thrust	the power to take off (p. 19)
winch	crank with a handle to lift a person or object (p. 21)

Explore More

On the Internet, use *www.google.com* to find out more about topics presented in this book. Use terms from the text, or try searching for glossary or index words.

Some searches to try: *paragliding*, *altitude*, or *parachute*.

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Name _____

INSTRUCTIONS: Use the book to complete the comparison chart for the wind sports below.

	Hang Gliding	Skydiving	Parasailing
Method of launch			
Type of chute			
Controls			
Air speed			
Average height			
Training			
Cost			

CATCHING AIR • LEVEL Y • 1

SKILL: COMPARE/CONTRAST

Name _____

INSTRUCTIONS: Create new words using the correct spelling of the suffix *-ion*.

–ion

–tion

–ation

–sion

float _____

revise _____

activate _____

erode _____

invent _____

recreate _____

administrate _____

rotate _____

Choose four words from the words you created above and use them in a sentence.

Two Kettles

A Reading A-Z Level Y Leveled Reader

Word Count: 2,497




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LEVELED READER • Y

Two Kettles



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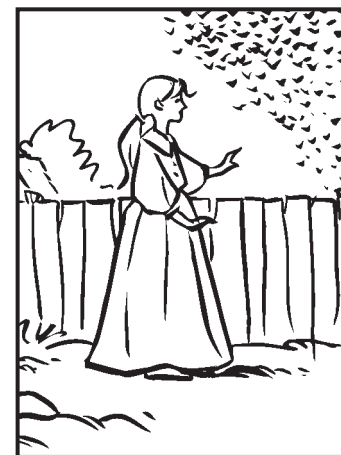


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Ellinor's Surprise

Startled by the noise of sudden musket fire, Ellinor dropped her work and ran outside to the garden, eyes searching for the source. *BOOM! BOOM! BOOM!* The **muskets** discharged, their sound echoing throughout the village of Plymouth. Hundreds of frightened birds blanketed the sky. "Father, why is Captain Standish training soldiers in the forest so early?"



"He isn't," her father responded. "The men have gone **fowling**. The game they bring back will add to our feast!"

He knelt to pick up a ripe orange **pompion**, as Ellinor, who did not appreciate surprises, impatiently asked, "Father? What feast do you speak of?"

Before he could answer her, the new governor of the Plymouth colony, William Bradford, approached their garden fence. The governor enthusiastically remarked, "Our joyous feast will celebrate a fortunate harvest!"

Bouncing in front of her, Ellinor's little brother teased, "Sister, didn't you know?" and scampered off with the plump pompion. Their giggling little sister clung tightly to his **doublet**, struggling to keep up with him.



"Is this true, Father?" asked Ellinor, still bewildered by what they were saying. *What could we have to celebrate?*

Hardship had overshadowed their lives since they came to Massachusetts a year ago. Her family was part of a group of 102 English colonists who sailed from England on the *Mayflower* in the winter of 1620. They had quickly erected homes and storehouses on the site of an abandoned village and **christened** their new settlement Plymouth Plantation. They were unprepared for the cruel, cold winter that assaulted them, and half of their small population, including Ellinor's mother, had been lost to sickness and death.

"Yes, we will celebrate our good harvest, even though we have suffered greatly," her father said, sensing her distress.



After many failures, the colonists had been fortunate to meet a man named Tisquantum, whom they called *Squanto*. His tribe was native to this area, and he spoke English. Squanto translated during meetings between the colonists and his people. He lived in Plymouth and taught them better methods for planting and storing food. Ellinor felt certain that none of them would have survived without his help.

The governor's tone grew serious as he said, "Ellinor, there are few healthy women remaining to prepare the food. You are old enough, so you must join them."

Ellinor nodded without comment, knowing she would be needed. But her uncertain heart still ached with conflicting thoughts.

Little Deer's Worries

"Mother!" Little Deer called out as she pulled a piece of **sineu** (SIN-you), thread made from deer tendon, through her long, bone needle. Her pet skunk, Tiptoe, napped contentedly in her lap while she assembled a new pair of soft moccasins.

"Mother, I need more deerskin for this," she explained.

Tiptoe awoke and leaped off her lap. Little Deer ran outside of her house, their *wetu*, chasing after Tiptoe. Hundreds of birds were circling above, shrieking urgently and casting a shadow down over her.



Little Deer wondered what was happening as she saw her mother approaching.

"Many shots were fired in the English village," her mother said. "Our leader, Yellow Feather, has been meeting in the longhouse to discuss what this might mean."

Little Deer felt her stomach tighten with dread. Her tribe, the Pokanoket (POH-kah-no-kit), was one of sixty-seven Wampanoag (wam-pa-NO-ag) nations. Their tribal ancestors had lived and hunted here for thousands of years. A year ago, the English people had arrived here on a large ship and built their village without asking permission. They knew little about how to grow food, how to build good shelters, or how to wear appropriate clothing.

"We do not know what the shots mean. They may signal a preparation for war," Yellow Feather said. "We will ask our English neighbors if they need our help. Gather your weapons. We leave soon."

Recently, Yellow Feather had made a treaty, or agreement, with the English to help each other in time of war. He feared war, but he would not break his promise to them.

Little Deer's resentment gripped her heart. *Why should we help them?* The English had stolen land and brought disease. They had built their Plymouth settlement on the site of the old village of Patuxet. All of the people who had once lived in the village, including her very best friend, had died from the plague brought by the intruders. It seemed wrong for the English to be building there.

She feared what a war could do to her people, their homes, and their quiet life. Filled with worry, she ran down to the stream with Tiptoe, hoping the water would calm her mind.



A Feast of Celebration

"Look! The Indians are approaching!" someone shouted.

At those words, Ellinor saw a large group of Wampanoag men striding swiftly toward the village. In front was their leader, a man whom the English called Massasoit (MA-sa-soy-it). Many of the men were wearing **finery** of deerskin or beaver pelts, and some wore shell decorations. Ellinor felt her discomfort increase. She knew they were peaceful people, but she did not understand Wampanoag ways. She certainly did not understand how they could wear animal skins for clothes. Ellinor felt certain she had nothing in common with any Wampanoag.

With Squanto translating for the two leaders, the governor welcomed Massasoit and his men and greeted them warmly.

"We heard many guns," Squanto translated for Massasoit. "Do you prepare for war?"

"No," the governor said. "There is no war. The men are hunting fowl for a feast. We will give thanks for what has been provided for us here."

Governor Bradford walked with Massasoit through the village, pointing out the preparations under way. The governor said, "This will be a hopeful celebration for us all. Please, would you and your people join us?"

Massasoit nodded, and Squanto said, "They will come. Men will hunt deer for the feast. Others will gather the women and children from the village. They will help you to prepare."

"We are pleased," smiled the governor. Turning to his aide he said, "Captain, tell everyone that King Massasoit and his people will celebrate with us."

Ellinor's heart dropped. More people! How would they feed them all?



A Joint Task

Ignoring everyone who watched, Little Deer walked closely behind her mother as they entered the English village. She held Tiptoe tightly and felt the eyes of the colonists staring at them. The English *sachem*, or leader, greeted the women and children warmly, but Little Deer secretly felt his smile was too large to trust.

The man was standing near an outside cooking **hearth** with Tisquantum and a fat Englishman. She looked at the buildings behind them and thought the hard, odd-looking square houses must be uncomfortable to live in. She then noticed a frowning, yellow-haired English girl, but the girl didn't look up at anyone.



"Welcome to Plymouth," said the man with the too-large smile. "We thank you for joining us in our celebration, and for helping us prepare our feast," he added. "Ellinor . . ."

The yellow-haired girl looked up, but she immediately seemed to shrink into her big, heavy dress.

"I want you to be in charge of preparing the **samp**, the corn porridge."

Tisquantum spoke next, "Little Deer, you have learned well from your mother the way of making *Nasump*. You will assist this girl, El-li-nor." Then, nodding toward Ellinor, he said, "Little Deer will help you."

Little Deer shook her head and stepped back slightly, bumping her mother.

"We are guests here," Little Deer's mother whispered softly, nudging her forward. "You will do as you are asked."

The fat man said, "You may grind the corn here," pointing at a hollowed-out log. "Then you may choose what ingredients you wish to add."

In silence, both Ellinor and Little Deer walked to their own log stations without looking at each other.

Making *Nasump*

Ellinor noisily deposited a cup of dried corn kernels into the hollowed-out log and began to grind them with a heavy stone **pestle**. Little Deer duplicated her actions. The only sound came from the scraping of the stone and corn and wood as neither girl spoke a word.

The little skunk sitting near Little Deer's feet made Ellinor nervous. It was too close and she was afraid it would make a terrible smell that would ruin all her hard work.



Both girls ground the hard corn into flour for many hours until their arms ached from strain. Two large, water-filled kettles hung over the open hearth. Once the water was boiling, Ellinor scooped up portions of the ground corn flour and added it slowly to one kettle. Little Deer added her corn mixture to the other kettle. Feeling ignored, Tiptoe crept around the fire and brushed against Ellinor's leg.

"AHHH! Get away!" Ellinor screamed. "It isn't proper for a wild animal to be near the food!"

Little Deer scooped Tiptoe into her arms, nuzzling his soft fur. *Why is Ellinor afraid of little Tiptoe?* she wondered.

Ellinor turned away sharply, marching off toward a small shed where the preserved meat was kept. Inside, she selected a large piece of salted pork and chopped it roughly, cutting off small pieces to add to her kettle. Once she had finished, she began to place pork into the other pot as well, but Little Deer's hand stopped her. She shook her head and said, "*Quahogs*."

Immediately gathering Tiptoe in her arms, Little Deer ran down the hill toward the ocean. "*Quahogs*," she called again, over her shoulder.



Collecting *Quahogs*

Little Deer stopped first at the swift stream that flowed near the village. Tiptoe popped out of her arms and began exploring the tall reeds that lined the bank.

The stream felt cool on Little Deer's feet as she waded in the water. She hopped across several wet rocks with ease. Little Deer was kneeling in the grass searching for wild onions when she heard a rustling sound.

The yellow-haired girl was standing at the edge of the stream and gesturing for Little Deer to return to the village. Ignoring Ellinor, Little Deer continued pulling onions and garlic. No English girl could order her around!

In her hard-soled shoes, the English girl stepped out onto a rock to cross over the stream, but she lost her balance and—*whoosh!*—she flipped into the water with a splash.

Little Deer giggled to see the English girl slumped in the water, completely soaked.

The yellow-haired girl spoke a string of harsh English words as she started to squeeze the water out of her bulky garments. Little Deer did not understand the words, but she wondered why the girl wore so many layers of thick, heavy clothing.



But Little Deer's task wasn't finished. She was expected to make *Nasump*, and that's what she would do! Stuffing onions and garlic into her bag she turned to walk downstream toward the ocean. She could hear the English girl sloshing behind her.

The shore was rocky, but it provided the right muddy ground for finding *quahogs*, the large, hard-shelled clams that she needed for her *Nasump*. Little Deer's eyes searched the mud closely, looking for the small air holes that revealed where the clams had buried themselves.

The English girl came up next to her and stood frowning, her fists firmly planted on her hips.

Little Deer pulled three *quahogs* out of the mud and stuffed them into her netted bag. Daylight was fading, so Little Deer motioned for the girl to help.

Still frowning, the English girl bent to look for air holes in the mud. She quickly pulled out several *quahogs* as if she had done it before. As they worked, a wave snuck up behind them, knocking them both over into the water. Little Deer almost smiled at the dunking, and she thought she saw the English girl smile, too.



Just then, a musket shot rang out nearby. The noise startled Tiptoe, who scooted up the face of a rocky cliff. Little Deer called his name, but the skunk climbed even higher.

Both girls dashed toward the cliff. Little Deer scaled the rock almost as fast as her little pet, her netted bag full of clams bouncing wildly on her back.

Little Deer had almost reached Tiptoe's hiding place when her foothold crumbled under her. There was nothing to grab onto! Her body scraped and bumped down the side of the cliff, rocks and dirt scattering and tumbling down with her. Little Deer fell hard into the water and sank out of sight.



Two Kettles

Ellinor hesitated for a moment and then ran to the edge of the water. "Little Deer! Grab my apron!"

Little Deer could feel the cold ocean water pulling her down. A blurry yellow shape splashed onto the water above her. Little Deer reached out to grab it and felt herself being pulled slowly toward safety.

Ellinor tugged as hard as she could, drawing Little Deer closer to the rocky shore. Little Deer saw the rocks and tried to pull herself up, but she jerked as pain shot through her arm.

"Are you badly injured?" Ellinor asked. Little Deer did not understand the words. She sat up weakly just as Tiptoe leaped into her arms and nuzzled her face worriedly. She looked up, and Ellinor smiled. The English girl had saved her life!

Ellinor pointed up the hill. "We should return." She gently gripped Little Deer's arm, and they stood up together.

Little Deer looked straight into the girl's blue eyes and grasped her hand. "El-li-nor."

The yellow-haired girl smiled. "You're welcome, Little Deer."

Little Deer turned back to the sea one last time. "*Quahogs*," she muttered sadly.

"I'm sorry you lost them," Ellinor said. "But we still have the salted pork."

But even being bruised didn't change Little Deer's solid determination to finish her task her own way. Tugging her hand, she led Ellinor back up the stream, where many late-ripening blueberry bushes grew, shaded by ash trees. They picked the plump berries until the sun began to set.



That night, the girls finished the *Nasump*, or samp, for the feast. They added the blueberries to Little Deer's kettle and the wild onion and garlic to Ellinor's. Each pot of corn porridge had a different taste, but both were praised as delicious.

Together, they served Governor Bradford and Massasoit at their tables inside the Plymouth meeting house. Later, the girls played games together in front of the huge fireplace. Each now realized that, although they were very different in how they dressed and spoke and in the kinds of houses they lived in, they shared similar feelings, fears, and experiences.

That night, Little Deer and Ellinor watched together as Captain Standish led his men in shooting exercises. Ellinor saw a silent tear fall from Little Deer's cheek.

"Friends," Ellinor said, gripping Little Deer's hand. She looked into her new friend's eyes and smiled.

Little Deer nodded, wiped her tear, and smiled back. They both knew the quiet peace between their people might not last for long, but the seeds of friendship they had planted would continue to grow.



Glossary

christened (<i>v.</i>)	named officially (p. 5)
doublet (<i>n.</i>)	an English waistcoat worn by men, women, older girls, and boys (p. 5)
finery (<i>n.</i>)	fancy clothes for special occasions (p. 10)
fowling (<i>v.</i>)	hunting for wild birds such as geese, ducks, pigeons, and swans (p. 4)
hearth (<i>n.</i>)	an outdoor or indoor fire used for cooking, light, and warmth (p. 12)
musket (<i>n.</i>)	a long-barreled firearm used by the English (p. 4)
Nasump (or samp) (<i>n.</i>)	thick porridge made with ground corn and cooked with meat, fruit, or vegetables (p. 13)
pestle (<i>n.</i>)	a tool for grinding food into powder or meal (p. 14)
pompions (<i>n.</i>)	pumpkins (p. 4)
quahogs (<i>n.</i>)	hard-shelled clams (p. 15)
samp (<i>n.</i>)	(see <i>Nasump</i>) (p. 13)
sinew (<i>n.</i>)	animal tendon (traditionally used as thread) (p. 7)
wetu (<i>n.</i>)	a Wampanoag house built from saplings bent into an arch and covered with bark (p. 7)

Name _____

INSTRUCTIONS: Read each statement and predict whether it is true or false, based on what you see in the illustrations. As you read, confirm or revise your prediction in the third column. If you confirmed your prediction, write the page number where you found the answer. If you need to revise the statement, change it to a true statement and write it in the box.

Statements	T or F	Revise or Confirm Your Prediction
1. The two girls were friends.		
2. Ellinor's father picked a pompion.		
3. English settlers captured Tisquantum and kept him prisoner.		
4. People and animals were alarmed to hear the muskets fired.		
5. Little Deer was worried as she wondered what the gunfire meant.		
6. Ellinor and Little Deer were happy to work together.		
7. Nasump was easy to make and didn't take long.		
8. The girls dug near small air holes in the mud to find where the clams were hiding.		
9. Ellinor slipped and fell into the water.		
10. Ellinor pushed Little Deer down the cliff.		
11. The skunk pulled Little Deer out of the water.		
12. The two girls became friends after their experience together.		

Name _____

INSTRUCTIONS: As you read, list causes in the left column and their effects in the right column.

Topic: _____

Cause	Effect
	
	
	
	
	
	

Name _____

INSTRUCTIONS: Read the sentences below. In the blank on the right, tell whether they are complex or compound. Then circle the parts of the sentences and label them *subject*, *verb*, *phrase*, or *conjunction*.

Gems are beautiful, and they are valuable.
subject verb conjunction subject verb

compound

1. Since she was old enough, Ellinor had to help

the women prepare food for the feast.

2. He hoped not, but Yellow Feather and the English had

agreed to help each other in times of war.

3. Once she had finished, she began to place pork

into the other pot as well.

4. When they arrived, the English built a village

on Wampanoag land without asking permission.

5. When she sat up, Tiptoe leaped into her arms.

6. She ran down to the stream with Tiptoe, where

she would let the water wash away her worry.

7. His smile was like a large quahog shell, and

Little Deer did not trust him.

Miltie Math-head: Football Hero?

A Reading A-Z Level Y Leveled Reader

Word Count: 2,286

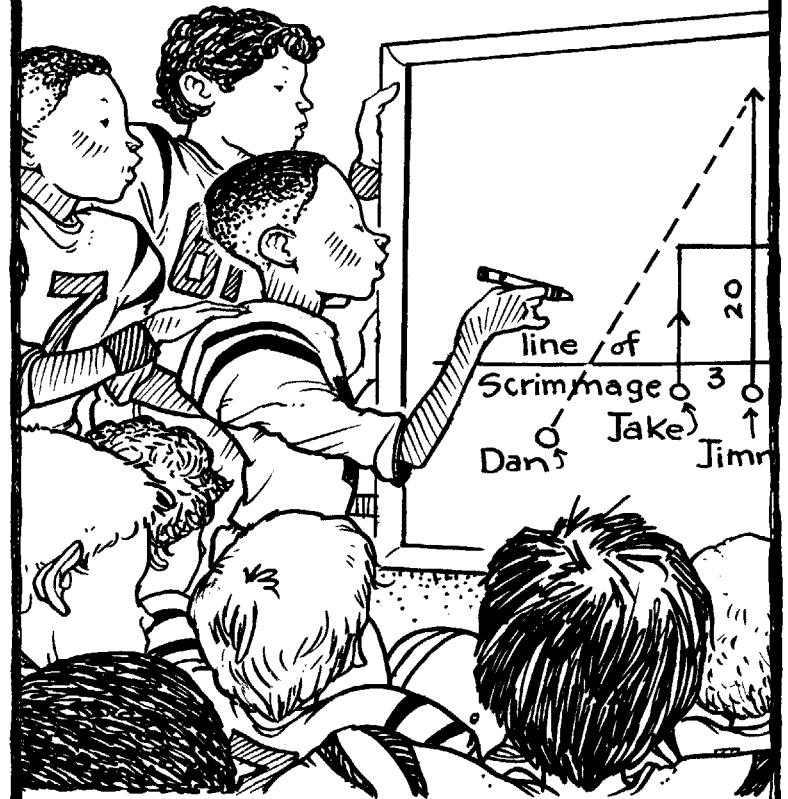


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Being on the Team

At first look, you wouldn't think Milton Meyers, also known as Miltie Math-head, would turn out to be one of the best **quarterbacks** in the history of Cobb County Pee Wee Football. At age 12, he stood just 4 feet, 5.5 inches, which he, of course, rounded to 4 feet, 6 inches. After eating lunch, he weighed 70 pounds—fully dressed, in hiking boots, with a roll of quarters in his pocket.





It's true that some not-so-big kids are fast runners, such as Jimmy "Don't-Blink-Now" Gordon, but not Miltie. He was slower than ketchup dribbling out of a new bottle. At tryouts, Coach Jersinski clocked Miltie running the 40-yard dash in 7.4 seconds. Jimmy, of course, had the best time: 5.2 seconds. He also had one of his usual wise-guy lines.

"Hey, Miltie," he called out, "This is the 40-yard dash, not the 40-yard dawdle."

"Maybe Turtle Boy thought it was a nature walk," said Billy Beffalini, who we called "Beefalo" because everything about him was big and strong, even his breath.

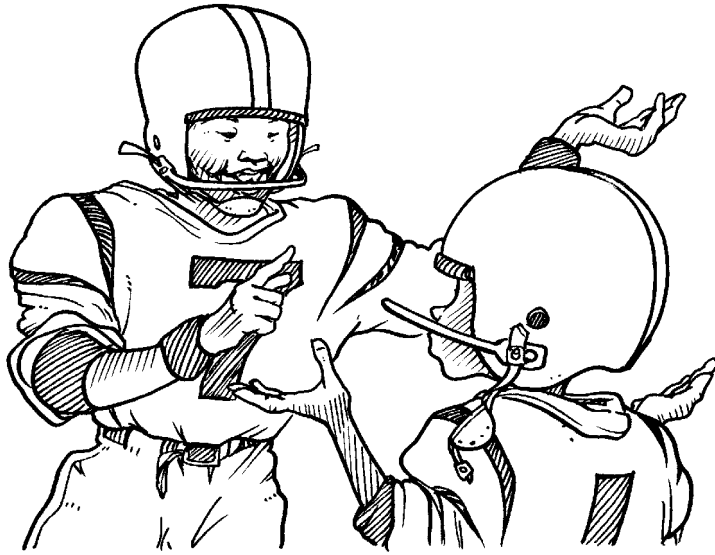
The teasing had the guys rolling on the ground with laughter. I knew it wasn't right to make fun of Miltie. He tried his best. Besides, he only came to tryouts because I asked.

The guys call me Dan-the-Man Dugan. I was the starting quarterback last year, but I've been Miltie's best friend a lot longer. We became pals in second grade when we both brought ant farms to school on Share Day—the same day Ms. Rayshap's class had a picnic.

You don't have to be a math-head to do the math here. Picnic plus ants equals disaster.

Miltie and I tease sometimes by calling each other "Ant Boy." Mary Beth Brady, who brought the brownies our ants crawled into, hates it when we tease, but she's been our friend ever since.





"I don't know about being on the team, Danny," Miltie said. "When it comes to sports, I've got two left feet, two left hands, and ten left thumbs. The rest of your friends think I'm a loser."

"That can't be," I said, "because I'm a winner, and I wouldn't hang out with anyone who wasn't also a winner."

"That's because you know the real me, and they don't."

That's exactly why I wanted Miltie to be on the team. So everyone else—and maybe even Miltie—could see the Miltie I saw.

"Give them a chance to know the real you, Miltie," I said.

The new season started fine with four wins and one loss. Then Coach J. hurt his back in a fishing accident, or playing golf. He kept changing the story. Either way, we needed a new coach. The only one who would step in at midseason was Old Man McGruder, who played football back in the days of leather helmets.

Mr. McGruder meant well. He gave us pep talks about teamwork and fighting spirit. He taught us neat, old-fashioned football **plays** like the "Statue of Liberty." But mostly, Mr. McGruder napped during our games.





Without a coach who was awake to call the plays, we ended up losing two games in a row. The rest of the season did not look good—until Miltie stepped in.

Now, of course, it all makes sense. But at first, most of the players would have said the **odds** of Miltie leading our team to victory were one in a million. On the plus side, he was already our official team benchwarmer and water boy.

Miltie's Math Pays Off

Miltie's feet may not have been quick, but his brain sure was, especially with math. He could multiply four-digit numbers in his head faster than a calculator.

Jimmy, who almost failed math, snorted when I bragged about Miltie's math smarts. So, he challenged Miltie one day during recess.

"Okay, Math-head, let's see how fast you really are." Jimmy pulled out a calculator. Beefalo called out the numbers.

"What's 1,234 times 5,678?"

"7,006,652," said Miltie.

"Unfair!" said Jimmy. "My finger slipped."

"Better not blink when Miltie is doing a math problem," I said.



"Ah, go back to that school for smart kids and let us regular kids play football," said Jimmy.

Miltie went to a math class at the community college one afternoon a week. It wasn't his fault he was great at math, but some of the guys wouldn't give him a break. We walked over to the skateboard ramp to get away from the others.

"They're just jealous," said Mary Beth. She saw the whole thing from the top of the skateboard ramp. "You know, you might win a few games if those guys knew as much about math as Miltie."

"Math?" I said.

"Math," said Mary Beth.

"Math!" exclaimed Miltie.

"Math?" I said, again.

"Miltie can use his math genius to design new plays," explained Mary Beth. "Football is all about math: **angles**, **arcs**, distance—"

"And the relationship between two points on a **grid**," added Miltie. From the gleam in his eyes I could tell Miltie knew exactly what Mary Beth was talking about, even if I didn't. "Thanks for the idea, Mary Beth," he said. "But I don't think I can do it."

"Of course you can do it!" she said, giving his hand a squeeze. "You're Miltie Math-head! Just let me know if I can help."

"*Help!*" I thought. But Mary Beth was right. Overnight, Miltie worked up a bunch of cool, new plays. The only one who would need help from us would be our **competitors**, if we could only get our teammates to go along with Miltie's plan.

Miltie was nervous about showing the guys his plays, so I gave him a pep talk and that gave him some **self-confidence**.

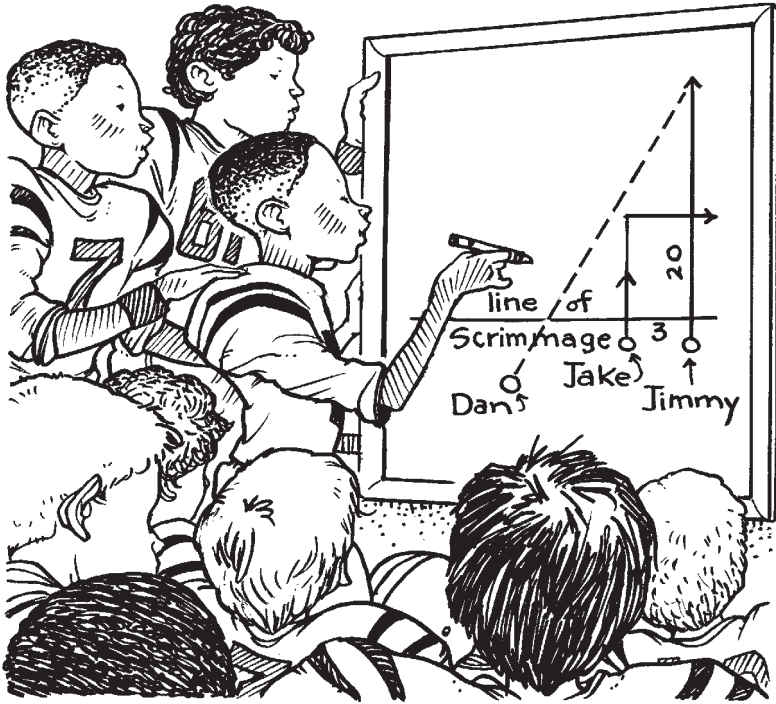
"A football field is just a big rectangle that is 100 yards long and 53.3 yards wide," Miltie began.

"Boring!" yelled Jimmy.

"I'm snoring!" said Beefalo.

"We know the size of the field, Milton," Jakey-boy, our tight end chimed in. "Just tell us the plays."

"Okay. According to my statistics, Dan here can throw a pass up to 33 yards—that's one-third of the field—about 82 percent of the time." Miltie drew on the chalkboard to explain.



"In this play, we take advantage of Dan's strong arm and Jimmy's speed. Jimmy starts on the **line of scrimmage** exactly three yards to the right of Jakey-boy. They both run straight down the field, together, but not touching, like two **parallel** lines—

"Para-what?" asked Jimmy.

"Parallel," said Miltie. "Next to each other, like the lines on a piece of notebook paper."

"Or the ten-yard lines that go across the football field," added Jakey-boy.

"You'll run parallel for 20 yards, and then Jakey-boy will make a 90-degree turn to the right to cut across the **perpendicular**."

"Huh?"

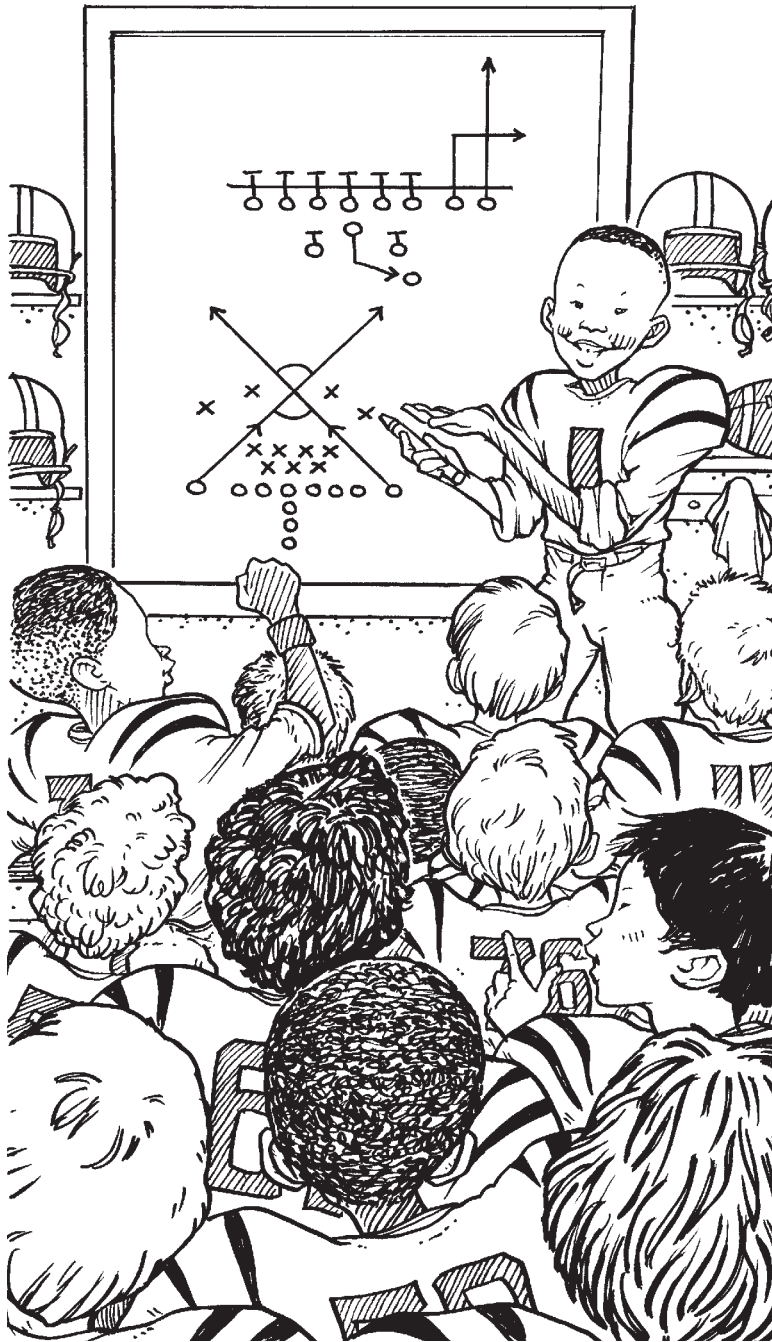
"Perpendicular, Jakey-boy. At a right angle to the direction Jimmy is running," I said.

The guys murmured my name, as if I was to blame for Miltie's math lessons. But it all made sense when Miltie added lots of X's and arrows to his picture, like real pro coaches do.

"You cut straight to the sideline, right behind Jimmy, taking the attention of his defender with you. That's when Jimmy goes into overdrive and Danny lofts a pass into his outstretched arms."

The grumbling quieted down as Miltie went on to explain other plays. My favorite was called "Angles to the End Zone."

Jimmy and Jakey-boy were to line up on opposite sides of the **offensive line**. Each runs toward the opposite corner of the end zone. But at the point where they would crisscross, or **intersect**, they change direction and run to the corner of the end zone on their side of the field. The defense would be confused; I'd find the open man and throw the ball for a touchdown. Bam!



Football Hero

Thanks to Miltie's plays we won three games in a row and finished the season 7-3, tied with our rivals, the Mudflat Maulers. A playoff game would decide the championship.

The Maulers were led by a huge linebacker named Maurice, but no one dared call him that. He went by the name "618." Some guys said that was his weight, but it was short for his nickname, "The 618 Express." When he charged, it was like a train barreling down the tracks. Whenever he tackled the ball-carrier he shouted, "The 618 is right on time."

Fortunately, Beefalo kept 618 out of my way long enough to set Miltie's plays in motion. Jimmy gained twenty-five yards in one play, and then ran another twenty-five for a touchdown.

"I covered one quarter of the field on each run," Jimmy proudly said to Miltie. Jimmy's math grade had improved since Miltie started calling our plays. "Add them together, and that's half the field."

We scored again on the "Angles to the End Zone" play. Meanwhile, we held the Maulers to a field goal.

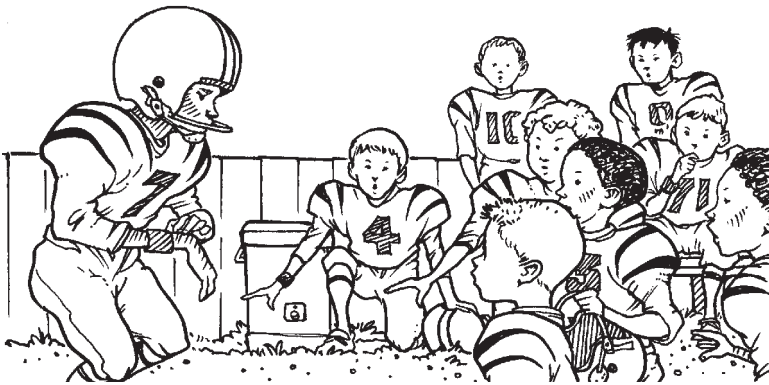
At the start of the fourth quarter, we were still ahead 14-3, but they scored right away on the kick-off. Then came the big blow.

We had the ball on the Mauler 20-yard line and were set up for a field goal. It would be an easy kick for Beefalo, even with The 618 Express coming in full speed.

I took the snap. Beefalo booted the ball into the air. Then I heard a snap. This time, it was my wrist.

"The 618 is right on time!" cried out the Mauler as he ran right over me. "Even if it jumped the track," he laughed under his breath. The guy had steamrolled me on purpose.

I was out of the game. The field goal was good, which made me feel a little better, but not for long. The Maulers scored again to tie the game, then they kicked a field goal to go ahead 20-17.



With me out, our backup quarterback Philly Stone took over, and he was plainly nervous. He fumbled on his first play, but luckily Beefalo recovered the ball. Then he threw an interception on the third play. Finally, in the last minute, with Miltie calling the plays, Philly put together a drive to the Mauler 15-yard line.

It was fourth down with three seconds on the clock. A field goal would send the game to sudden-death overtime—the first team to score wins.

Miltie called a time-out. The team gathered around.

"I say we kick the field goal, then get them in overtime," said Beefalo.

"What if you miss?" asked Philly.

"I won't," said Beefalo. "We're at the 15-yard line. That's only fifteen-hundredths of the field—a cinch for me."

"But what if I mess up?" said Philly. "You saw what 618 did to Dan. That's not helping my nerves."

He had a point.

"Forget the field goal," said Miltie. "Let's go for it." A hush replaced the usual huddle hubbub. "I've got a plan."

"A plan?" scoffed Beefalo. "Why should we let a math-head decide what happens to this team?"

"Because Miltie got us here with his plans," said Jimmy. "I, for one, want to know what Miltie has to say."

"Miltie, Miltie, Miltie," sang out the team.

Miltie looked around at his cheering teammates. The deer-in-the-headlights look in his eyes was gone, and in its place was a fiery glint.

"We set up to kick the field goal," said Miltie. "But we don't."



A trick play! That Miltie wasn't just a math genius; he had a head for football.

"Remember the old triple reverse that Mr. McGruder showed us? Instead of the snap coming to me, holding the ball for the place-kicker, it goes directly to Beefalo."

"Whoa," I said. "I get the triple reverse part. But don't you mean *Philly* doesn't get the snap?"

"Normally, that would be the situation with you out, Dan. But I'm going in, not Philly."

Miltie Meyers at quarterback?

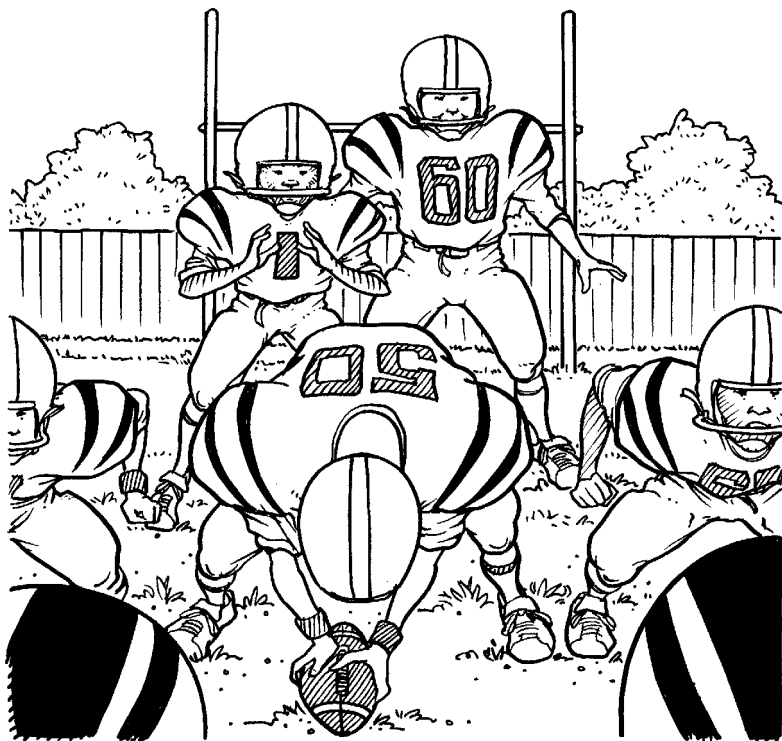
"You'll be right in the path of The 618 Express," said Philly.

"Exactly," said Miltie. "That's where I want to be."

"But Miltie, that runaway train must be a foot taller than you and weigh three times as much," I said. "And I can tell you from personal experience, you don't want to get in his way."

"I wasn't planning to," he said. "In fact, my size will be to my advantage WHEN I TAKE HIM OUT."

"Miltie, Miltie, Miltie!" cheered the guys again, clapping each other on the back.

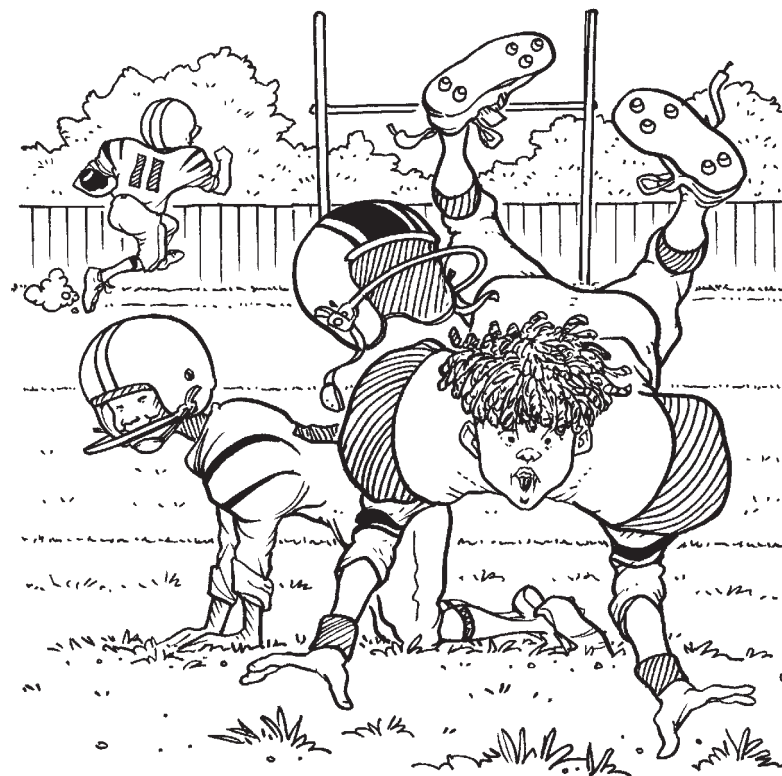


"Besides, nobody messes with my old pal, Dan-the-Man," Miltie said.

Miltie put on his helmet, which for the first time, seemed to fit just right. He led the team back onto the field and took his spot about five yards behind our center.

"Hike!" Miltie called. The ball was snapped, as planned, past Miltie to Beefalo. In came the charging 618 just as Jakey-boy came around for a handoff. Jimmy swung around from the other end for his handoff.

The rushing 618 stayed right on track, not fooled by the play. Miltie stood up to block him. Above the roar of the crowd, I heard Mary Beth cry, "Watch out, Miltie!" Then, just as 618 about ran over Miltie to demolish Jimmy, Miltie dropped to his knees and braced himself on the ground. The 618 Express, expecting to flatten someone a few feet higher up, tripped over Miltie's backside and went flying high. When the Mauler finally landed, Jimmy and the football were safe in the end zone.





Miltie Math-head had derailed The 618 Express and led our team to victory. The team raised Miltie on their shoulders and carried him around the field.

“Miltie, Miltie, Miltie,” they cheered.

“I knew you could do it,” I said. “Football is all about math.”

“Actually, Dan,” he said smiling, “for this play, I used **physics**—but I’ll tell you all about that later.”

Glossary

angles	the corners formed by two lines meeting at a point (p. 11)
arcs	segments of a circle (p. 11)
competitors	people who compete against, or oppose each other; rivals (p. 12)
grid	a group of crossing horizontal and perpendicular lines (p. 11)
intersect	to cut or pass through (p. 14)
line of scrimmage	an imaginary line parallel to the goal lines that runs across the football field, separating the teams (p. 13)
odds	a difference in whether one thing is likely to happen over another (p. 9)
offensive line	part of a football team that blocks the defense so the ball carrier can score (p. 14)
parallel	lying or moving in the same direction an equal distance apart (p. 13)
perpendicular	at a right angle to something (p. 14)
physics	the science of motion and matter (p. 23)
plays	the planned actions of the players in a game (p. 8)
quarterbacks	football players who signal plays (p. 4)
self-confidence	belief or trust in yourself (p. 12)

Name _____

INSTRUCTIONS: Before reading *Miltie Math-head: Football Hero?*, fill in the first column with your prediction about what will happen. During reading, fill in the middle column with changes in your prediction. When you are finished reading, write what actually happened in the final column.

What I predict will happen	Changes in my prediction	What actually happened

Name _____

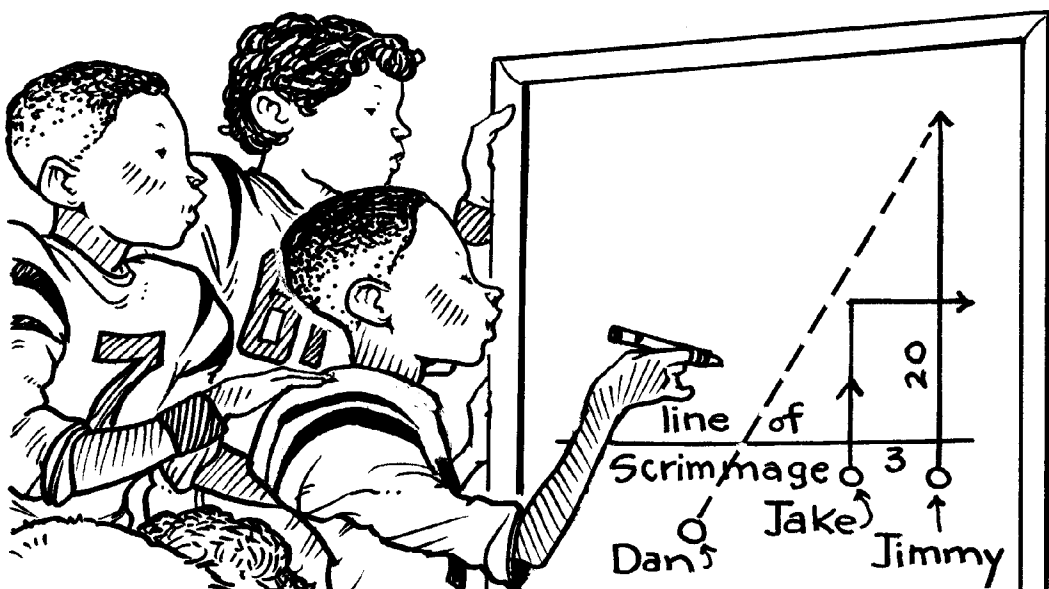
INSTRUCTIONS: Different types of reading material are listed below. Choose the term from the author's purpose box that best describes why each author might have written the book.

inform

persuade

entertain

1. Math book _____
2. Superman comic book _____
3. Laundry detergent advertisement _____
4. Mystery book _____
5. "Summer Concert Series" poster _____
6. Science book _____
7. Fairy tale book _____
8. Breakfast cereal advertisement _____
9. Encyclopedia _____
10. Sunday newspaper comic strip _____



Name _____

INSTRUCTIONS: In the text below, circle the letters that should be capitalized. Use a red pencil to circle the letters that should be capitalized in proper nouns. Use a blue pencil to circle the letters that should be capitalized to mark the beginning of a sentence.

it's true that some not-so-big kids are fast runners, such as jimmy "don't-blink-now" gordon, but not miltie. he was slower than ketchup dribbling out of a new bottle. at tryouts, coach jersinski clocked miltie running the 40-yard dash in 7.4 seconds. jimmy, of course, had the best time: 5.2 seconds. He also had one of his usual wise-guy lines.

"hey, miltie," he called out, "this is the 40-yard dash, not the 40-yard dawdle."

"maybe turtle boy thought it was a nature walk," said billy beffalini, who we called "beefalo" because everything about him was big and strong, even his breath.

the teasing had the guys rolling on the ground with laughter. i knew it wasn't right to make fun of miltie. he tried his best. besides, he only came to tryouts because i asked.

the guys call me dan-the-man dugan. i was the starting quarterback last year, but i've been miltie's best friend a lot longer. we became pals in second grade when we both brought ant farms to school on share day—the same day ms. rayshap's class had a picnic.

you don't have to be a math-head to do the math here. picnic plus ants equals disaster.

miltie and i tease sometimes by calling each other "ant boy." mary beth brady, who brought the brownies our ants crawled into, hates it when we tease, but she's been our friend ever since.

In Huck's Shoes

A Reading A-Z Level Y Leveled Reader

Word Count: 2,355



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In Huck's Shoes



A Great Gallardo Book Written by Lori Polydoros
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Note: *In Huck's Shoes* is the second in a continuing series written by Lori Polydoros. Travel with Miguel Ventura and his family as they experience classic adventures.

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DRA	N/A

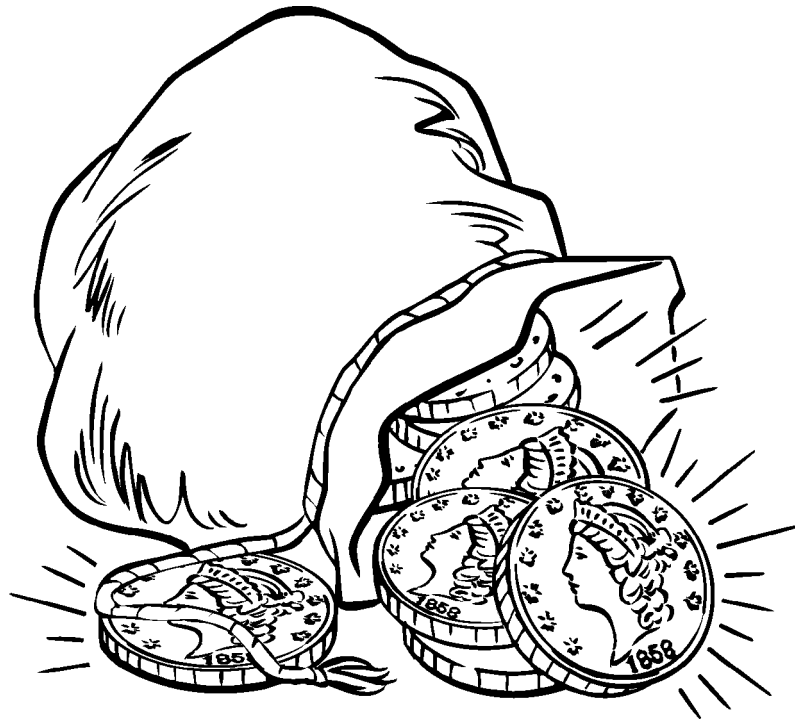


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Anything for Adventure

Clear the tables, chop the onions, bake the bread—Miguel Ventura was tired of all the work he had to do in his family’s sandwich shop.

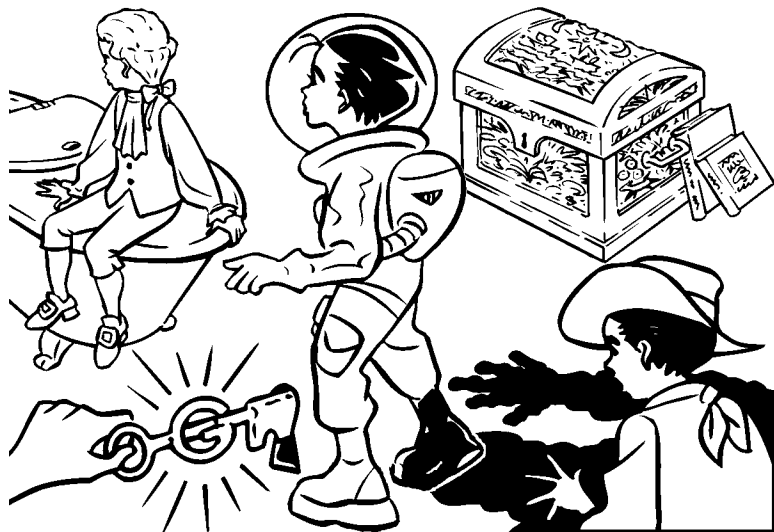
“It’s not fair. I’m only eleven,” he said to his Mom. “Saturdays are supposed to be fun.”

“Sorry, Miguel,” she said, “but you’re the oldest. Teresa’s only seven.” His little sister zipped across the shop bouncing a ball.

His dad unlocked the front door, saying, “She’s right, we need you to help out.”

The pit of Miguel’s stomach ached—and not from hunger. Adventure and freedom seemed a million miles away. “Unless . . .” he whispered, looking toward the shop’s backroom.





A few months ago, Miguel climbed an old, red ladder that led up to a loft in the backroom. He discovered a chest full of enchanted books that belonged to his great-grandpa George, a magician called The Great Gallardo.

Somehow, after reading a passage from one of the magical books, Miguel was transported into the story as one of the characters. Through the Great Gallardo's books, Miguel had met Benjamin Franklin, battled a terrifying space monster, and become a cowboy in the Old West!

Miguel raced to the backroom and climbed the ladder, skipping the broken rung. He had just enough time before the lunch rush to discover his next adventure.

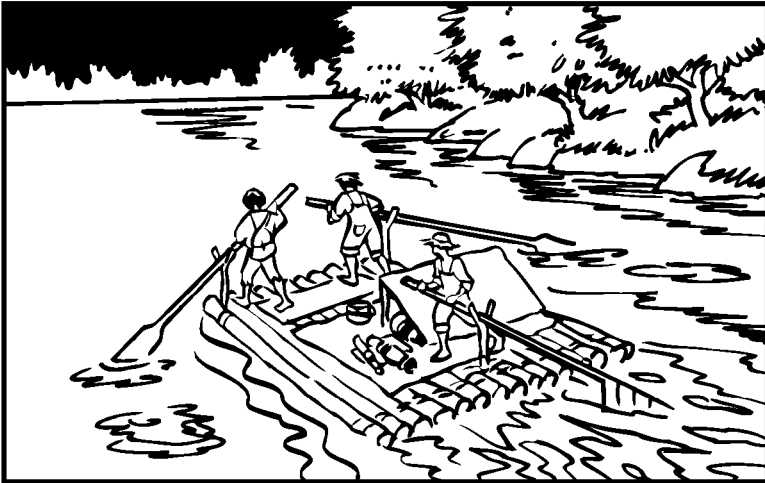
Being Huckleberry

The old skeleton key stuck out of the lock in the magical, black chest, and Miguel turned it with a click. He grabbed the first book, *The Adventures of Tom Sawyer*, and he couldn't wait to see which of Tom's classic adventures he'd be pulled into. A feather marked page 91, and a sentence jumped out at him like it was in three dimensions. Miguel read aloud. "They shoved off presently, Tom in command, Huck at the after and Joe at the forward."

The words of the next sentence danced around on the page . . . *folded arms, Tom amid ships, and gave with stood and gloomy-browed orders low, his a stern whisper in.*

Miguel closed his eyes to fight off the dizziness as cool air whispered across his face.





"Bring her to the wind!" a voice shouted.

Miguel opened his eyes to find himself sailing down a river, rowing at the left oar!

"I'm Huck Finn!" he yelled, looking down at his bare feet and scraggly pants.

"That ye be!" the boy at the **bow** called. "Now bring her 'round!"

"Aye, aye, sir!" Miguel smiled ear-to-ear, breathing in adventure with every breath.

Tom Sawyer was short and wore a black **bandanna** on his head. The tall, skinny kid at the **stern** was Tom's friend, Joe Harper. In the story, Miguel remembered that the three boys ran away to become pirates on Jackson's Island.

The boys rowed quietly past a distant town lit by a few glimmering lights.

Finally, Tom called out, "I am the Black Avenger of the Spanish Main!"

"I am the Terror of the Seas!" yelled Joe.

Both boys looked at Miguel, who swallowed hard.

"And Finn, the Red-Handed, what do ye say for yerself?" Tom asked.

"I . . . I . . . say THERE GOES JACKSON'S ISLAND!" Miguel called as the current swiftly swept them by it.

Tom scrambled about the raft, shouting orders, "Act lively now, mates!"

Miguel rowed hard along the tree-covered island until his arms ached, and the raft finally grounded itself on a **sandbar**.

Tom and Joe created a roaring fire. "For the feast!" Joe said. Both boys revealed two succulent hams that they had 'borrowed' for the trip.

"What's in yer bag, Huck?" Tom asked.

Miguel suddenly became aware of the weight on his back.



"A skillet!" said Joe as he opened Miguel's bag. "To fry the bacon!" Joe continued as he tossed in slices of ham. As they sizzled over the flames, Miguel's stomach grumbled.

"We will be the grandest sort of pirates." Tom said, pacing and marching around the fire. "Doing as we please. Maybe we'll bury some treasure tonight, so the ghosts will watch over it."

The wind howled. Tom howled back.

"No **responsibilities!**" said Joe.

"No waking up in the morning, doing chores, going to school or to church," Tom said. "More of a carefree life for you, Hucky?"

"I am Finn, the Red-Handed, and it's a pirate's life for me!" Miguel's duties back at his family's shop vanished as he curled up next to the campfire. He let go of his wakefulness, and let in the freedom of his new life as a pirate.

Skeeter Fever

The **eerie** silence of the woods woke Miguel in the morning. Joe was sprawled against the log next to him, but Tom was nowhere to be seen.

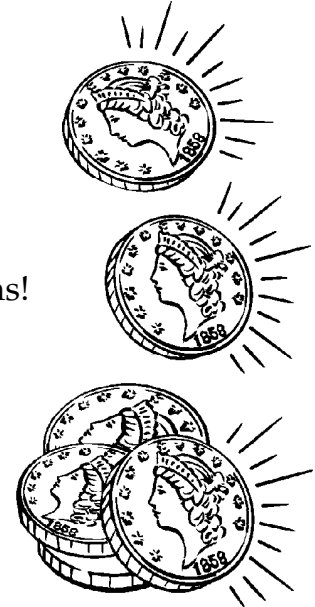
Miguel thought of his family, and a slight pain clenched his heart. He'd never been gone this long before in one of the Great Gallardo's books, and although he was enjoying his newfound freedom, he hoped that time passed differently when he was away. He didn't want his parents to worry.

"Huck!" Tom ran up to him. "Look what I discovered on the raft!"

Miguel did not move as Tom held up a leather sack, the size of a marble bag.

With trembling hands, Miguel tugged open the bag and gasped. Twenty gold coins! Miguel asked, "Do you know who they belong to?"

"This raft must have belonged to some *real* pirates," Tom guessed with **awe**.





Uh-oh. Miguel did not remember this storyline from the book.

"Real pirates?" Joe questioned, half-asleep.

Tom nodded. "Them pirates probably have been looking for their raft," Tom said. "It's only a matter of time 'til they find it."

Miguel's heart sank.

"We're gonna give everything back, right?" Joe asked, now awake.

"Heck, no!" Tom said. "We are pirates, too. We'll bury the gold at midnight tonight."

Gulp.

"Pirates have swords, knives, and guns," Joe muttered. "All we have is a pocketknife and a bunch of fishhooks."

"Yeah, but we got these." Tom pointed to his brain. "We're smarter than any pirate I've ever met."

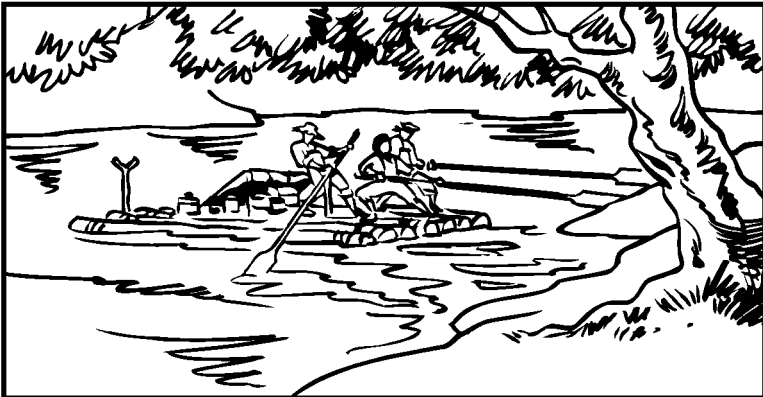


After searching the island, they found a damp cave in which to hide their supplies. "All we need to do," Tom said, "is fill up the coin bag with rocks and put it back on the raft. Then, we'll take the raft a mile downriver."

"To make it look like the current swept it away," Joe said.

"They won't suspect it had been pirated," Tom said.

Something wasn't right. No gold or pirates existed on Jackson's Island in The Adventures of Tom Sawyer. This just didn't make sense.



On their way back after grounding the raft farther down the river, a gunshot shattered the still air. "The pirates!" Tom whispered. "We've got to bury the **booty**!"

Using pieces of splintered **shale**, Tom, Huck, and Joe dug furiously in front of an ancient, oak tree. Tom dumped the coins into his marble bag. He chucked it in the hole and filled it up.

A branch broke behind them. Miguel held up the lantern to find three of the ugliest pirates they'd ever seen! The first one was tiny, the second a few feet taller, and the third pirate stood as tall as a professional basketball player. All three of them were covered in red, pus-oozing mosquito bites!

"What'r ye laddies think yer up to?" The tall one scratched his neck and held out his sword.

Joe looked at Miguel, who looked at Tom.

"Just burying our cat," Tom said.

"Yer cat?" the medium one asked as he slapped his forehead.

"He died of the fever," Tom said.

"The *fever*?" questioned the short one, picking at a nasty bite on his chin.

"Mosquito fever," Joe chimed in, causing the three pirates to gulp.

"The rain's been fierce this year," Tom said.



"All them skeeters brought a nasty disease with 'em," Joe said.

"What kind of disease?" asked the medium pirate. "Cause we fell asleep last night, and those blasted bugs ate us alive!"

"It eats away your flesh first," Miguel said, without thinking, "then your organs." Maybe he was becoming a pirate, after all.

Tom and Joe almost laughed.

The pirates stood there, scratching every inch of exposed skin.

"But don't worry," Tom said. "You can stop the fever."

"How?" they shouted.

"By *not* scratching," Joe added.

The pirates froze. Then, the short pirate slapped his leg, the medium one rubbed his neck, and the tall guy scraped his arms against the bark of a tree. "We can't stop scraaaatchiing!"

"I do know a way," said Tom, as he winked at Miguel and Joe. "Follow me."

They headed back to the sandbar where the pirates' raft was grounded on the beach again. "This yours?" Tom asked.

"Yep," the tall one said, as he danced around to stop from scratching. "We just found it after it drifted away from us a day ago."

Miguel eyed the small sack of marbles through the **slats** of the crate on the raft.

"Tell us how to stop the itch, boy." The short pirate clenched his teeth, and pointed a sharp knife at them.

"This is what you do," Tom said, taking the pirates down the beach.

Soon thereafter, the boys saw the pirates sailing away on the raft—their bodies coated in white sand!

"Now don't move," Tom shouted, "until the sun hardens that sand!" He laughed. "'Tis the only way to rid yerselves of the itch!"



They waited, in silence, until the pirates were out of sight.

"Shiver me timbers!" Joe shouted. "You did it, Tom!"

"The pirate king!" Miguel bowed down. "This is the greatest day of my life!"

"I couldn't have done it without me mates. Arrgh," he said, as they rushed through the trees to unbury their booty, dancing and singing their favorite pirate tune.

Back on Track

That night, the boys slept hard, dreaming of their **devious** pirate tricks. When they awoke, a strange swishing sound came from the river.

"What's that?" Miguel asked.

"Sounds like . . ." Joe started.

". . . the steamboat!" Tom finished.

Joe and Tom always finished each other's sentences because that's what good friends did. Miguel began to miss his own best friends.

Boom! A cannonball shot rang out from the steamboat.



"Someone has drowned!" Joe said as they listened carefully to people calling out from the decks of the steamboat.

"Not just anyone," Tom said, smiling. "They think *we've* drowned!"

Miguel remembered this part of the story well. Tom was just about to make the trip home to leave a note for Aunt Polly to tell her he was safe.

"We're heroes!" Joe said.

"We're the talk of the town!" Tom said.

That night, around the fire, Joe became homesick. "I just can't let my ma suffer so."

"Terror of the Seas!" Tom shouted. "There's no stoppin' us, now." He whistled, **entranced** by the gold coins.

Joe looked at Miguel, who shrugged.

"Don't ya think, Hucky?" Tom said. "You've lived the carefree life. Tell Joe he doesn't need to go back."

Miguel had mixed emotions. He was having the time of his life, and yet part of him felt like Joe. He knew his parents would miss him terribly, and he missed them too, even his sister, Teresa.

Miguel hesitated.

"Huckleberry, here, thinks you ought to continue your newfound life as a pirate. Your family will go on without you," Tom answered.

Those words sent a shiver down Miguel's spine. Tom seemed to have forgotten about all of the people who loved him. With his scruffy clothes and matted hair, Tom Sawyer looked like he was turning into a full-fledged pirate!

Miguel worried that *The Adventures of Tom Sawyer* wasn't unfolding as it should. He had to remedy that, and quickly.

That night, after Joe fell asleep, Tom and Miguel huddled around the fire.

"I'm surprised you didn't help me convince Joe," Tom said. "You love freedom more than anyone I know, Huck."



"I . . . I think that . . ." Miguel said. "You don't appreciate what you have."

"What?" Tom's mouth gaped.

"Your Aunt Polly loves you," Miguel said.

"Sure, you've got to get up and do chores and go to school, but she relies on you, Tom," Miguel said. "She wants you to be a better person."

"You sound like her right now." Tom turned away in disgust. "You **betray** the life of the pirate, Huck."

An owl hooted from the tree above. Miguel stood up and tossed a stone into the river. "It may not feel like it now, but things will get better, and you'll see how much your aunt's love means." Miguel sounded like his own mother, but he'd do anything to save *The Adventures of Tom Sawyer*.

"Arrgh!" Tom spit into the fire. "I'm a good pirate, I am! And now that *everyone* thinks I'm dead, I can start over fresh."

"Things will work out if you let them know you're safe," Miguel said. "You'll have many adventures—believe me."

Tom looked up at the stars.

"And grownups can help you out in scary times," Miguel whispered. "Don't be afraid to ask when you need it."

"You've gone soft, Huck." Tom pulled his bandanna low over his eyes to sleep.

Miguel curled up too, wondering if Tom would slip out that night to visit his family, like in the story.

A coyote howled, and Miguel opened his eyes in the darkness just before dawn. Joe snored next to him, but Tom had vanished in the night. Miguel found a rolled piece of bark that read:

Huck,

Thanks for the truthful words, wherever you got them. Life in the woods has made you wise, Finn the Red-Handed! Be back in a few days. Take care of Joe!

Tom

Miguel smiled. Now everything was back on track!

The trees began to blur so he closed his eyes. The warmth of the campfire faded, and Miguel realized that he was back in the loft. The smell of freshly baked bread made his heart flutter. Being a pirate was exciting, but Miguel was happy to be home.

“Miguel!” his Dad called. “Lunch rush is here! I need you to make a few bacon deluxe sandwiches for me.”

Miguel looked at his watch—realizing only minutes had passed since he’d come up to the loft. “Aye, aye, sir!” he answered. “I’ll do *anything* for a little adventure!”

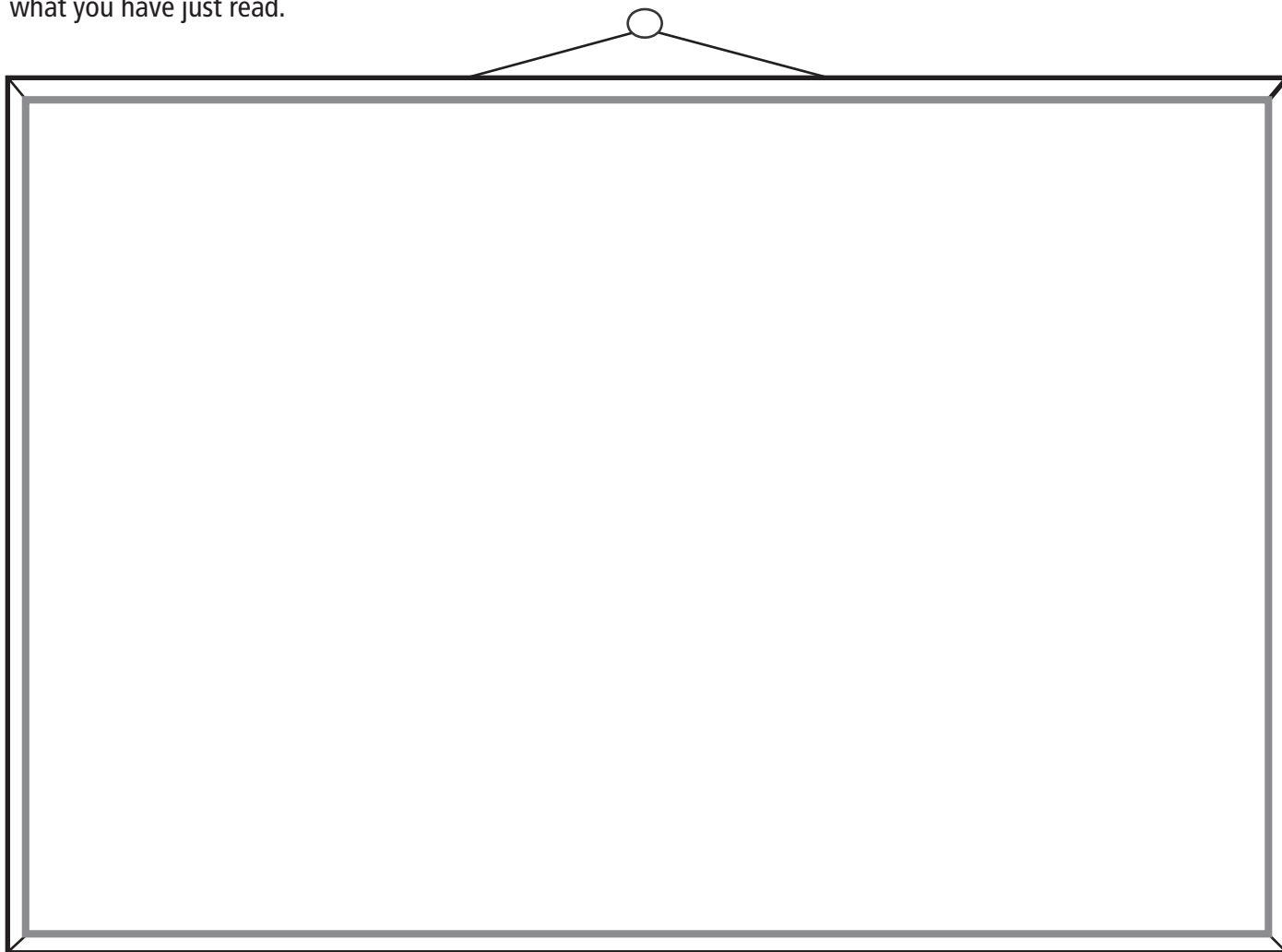


Glossary

awe	a mixed feeling of wonder, fear, and respect (p. 10)
bandanna	a large handkerchief, usually with a colorful design, worn around the head or neck (p. 7)
betray	to be unfaithful, false, or disloyal (p. 21)
booty	money or goods taken illegally or from an enemy in a time of war (p. 13)
bow	the front, or forward, part of a boat (p. 7)
devious	not straightforward or in the proper way; shift (p. 18)
eerie	causing fear (p. 10)
entranced	to have filled with wonder and delight (p. 19)
responsibilities	things a person is trusted to do (p. 9)
sandbar	a ridge of sand formed by water movement (p. 8)
shale	a rock formed by layers of clay, mud, or silt (p. 14)
slats	narrow strips of wood (p. 16)
stern	the back, or aft, part of a boat (p. 7)

Name _____

INSTRUCTIONS: Draw a picture to represent a part in the story where you stopped to visualize in order to understand what you have just read.



IN HUCK'S SHOES • LEVEL Y • 1

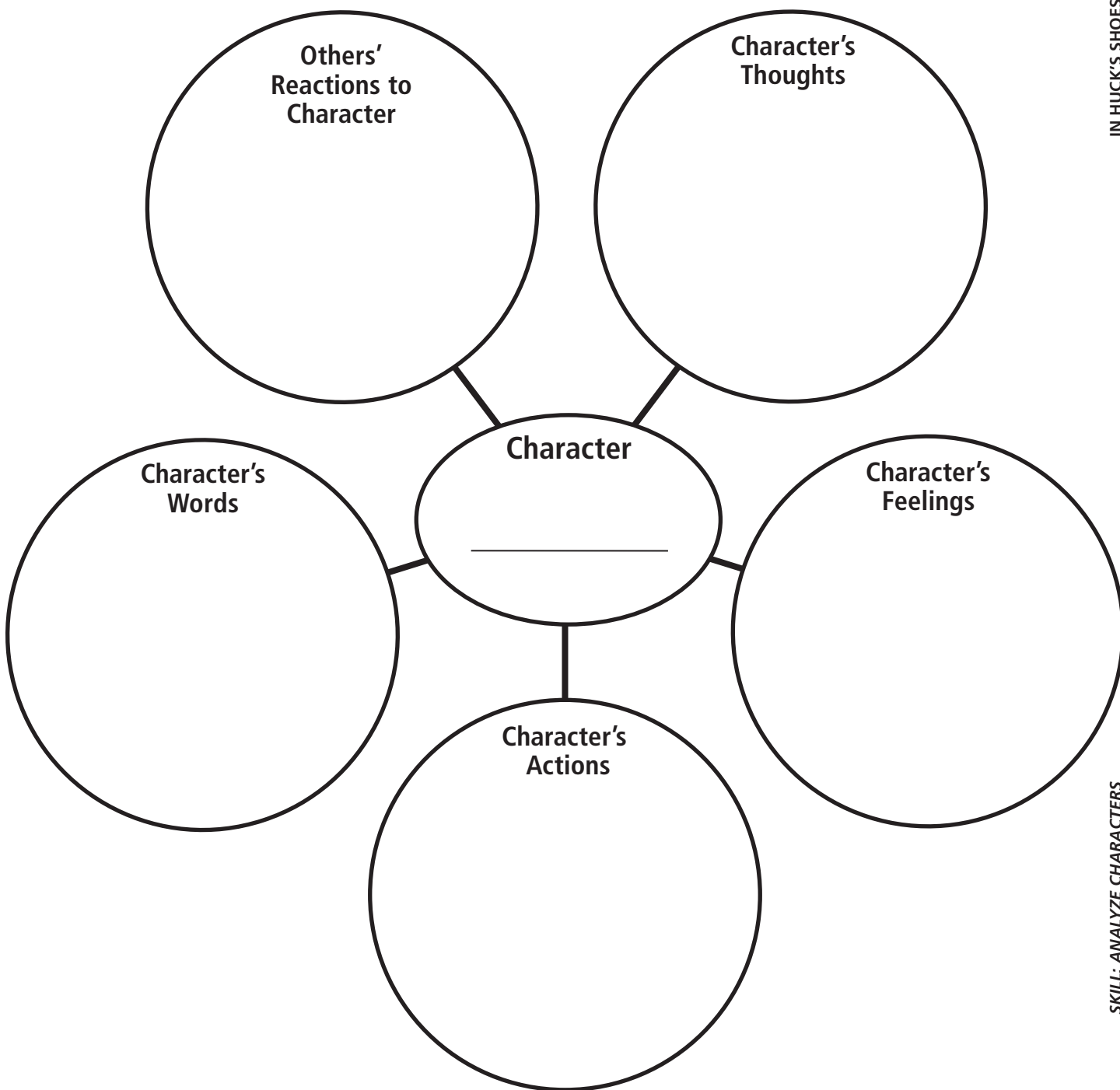
INSTRUCTIONS: Write a description to explain your drawing.

A large rectangular box with rounded corners and a spiral binding on the left side, intended for writing a description.

SKILL: VISUALIZE

Name _____

INSTRUCTIONS: Write Tom's name in the center circle of the web. Tell about his words, thoughts, feelings, and actions in the remaining circles. Put a star next to any traits that changed during the course of the story.



Name _____

INSTRUCTIONS: Read each sentence. Circle the **subject** red and the **object receiving the action** blue. Replace these words with pronouns and rewrite the sentences on the lines provided.

1. Miguel watched his sister bounce a ball.

2. His sister bounced the ball by Miguel.

3. The book transported Miguel into the story.

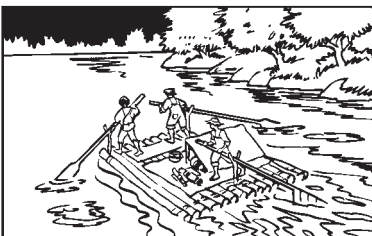
4. Tom, Miguel, and Joe sailed down the river.

5. Tom showed the coins to Miguel.

6. The coins were in the marble bag.

7. The pirates were covered in mosquito bites.

8. The raft drifted away from the boys.



Name _____

INSTRUCTIONS: Read each of the words in the left column. Write the standard English word or words that have the same meaning as the word on the line. Use four of the words to create a sentence that one of the characters from the book might say. Write the sentence in the box at the bottom of the page.

ye _____

'round _____

aye _____

yerself _____

yer _____

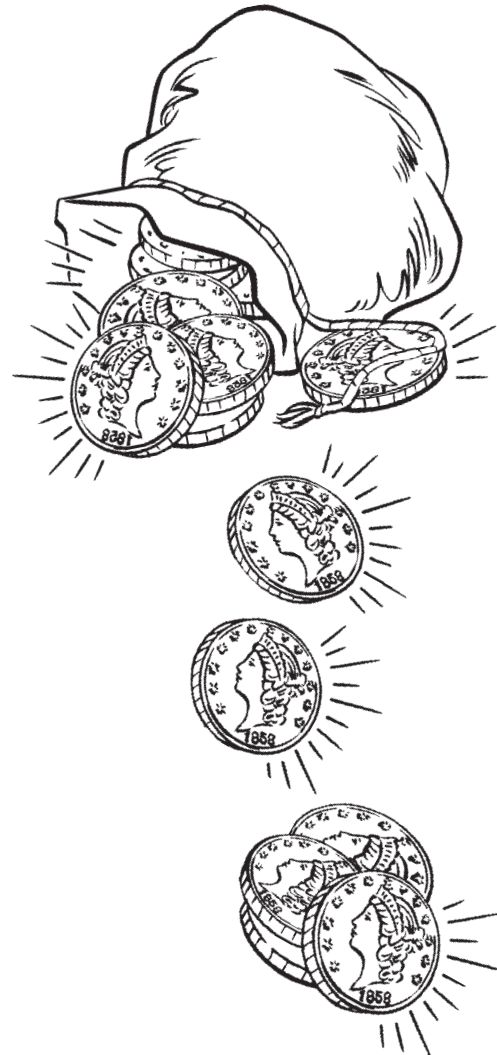
'til _____

gonna _____

what'r _____

skeeters _____

'em _____



Battling for Independence

A Reading A-Z Level Y Leveled Reader

Word Count: 1,676

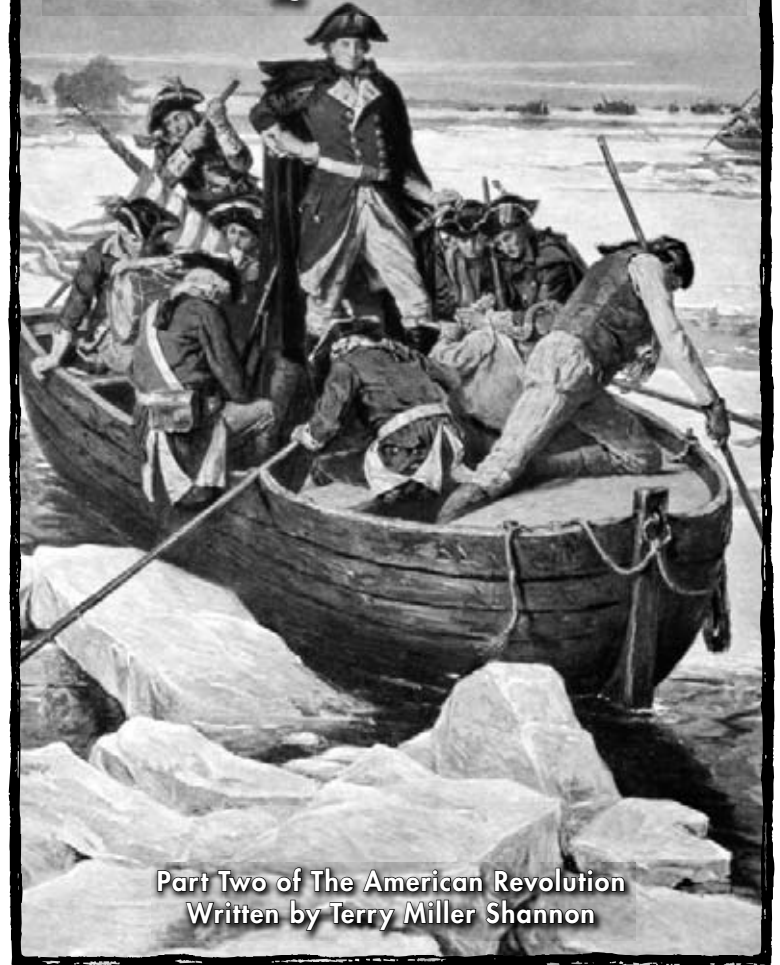



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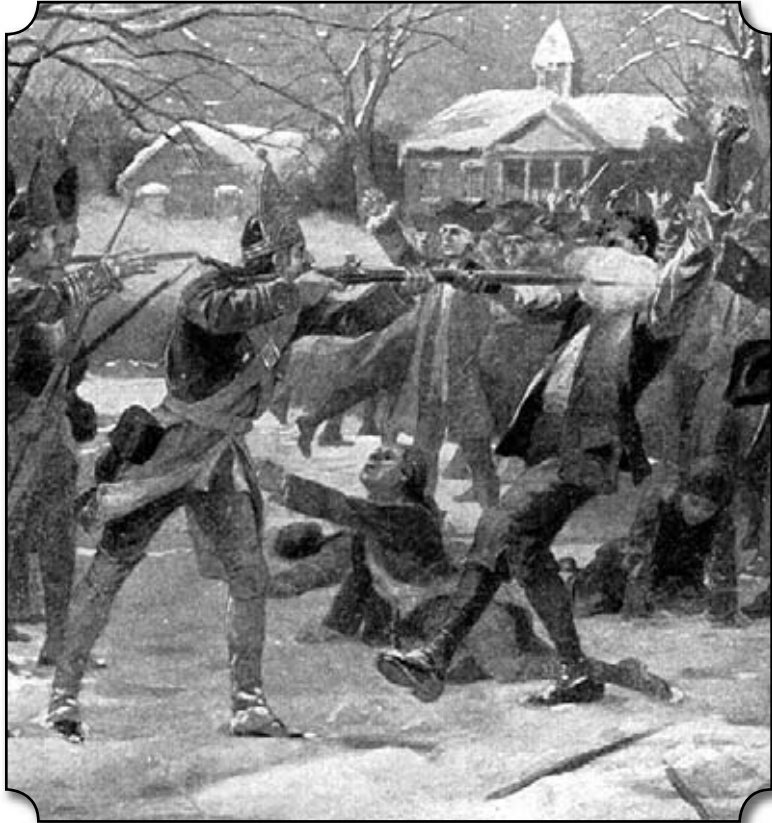
Battling for Independence



Part Two of The American Revolution
Written by Terry Miller Shannon

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Part Two of The American Revolution

Battling for Independence at Level Y tells about the major battles of the Revolutionary War. Read *Seeds of Revolution* at Level X to find out what events lead to the war. Then read *Building a Nation* at Level Z to find out what happens after the war is over.

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Level Y Leveled Reader
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Correlation

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Reading Recovery	28
DRA	N/A

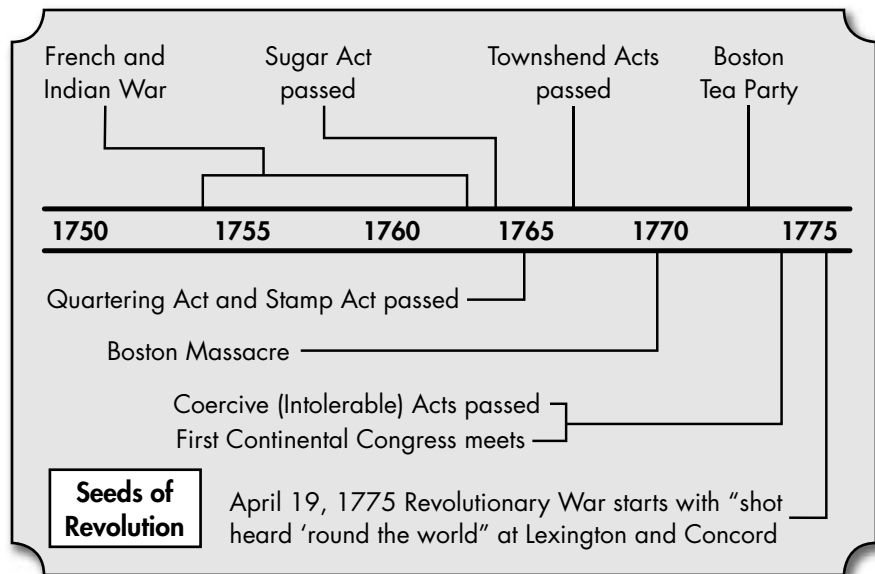


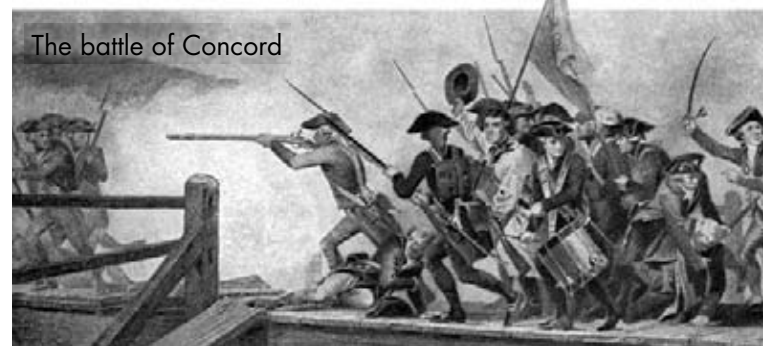
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Introduction

America was not always a country. Over 200 years ago it was a collection of 13 colonies ruled by Great Britain. Britain began taxing the **colonists** and enforcing unpopular new laws. The colonists objected, saying they wanted “no taxation without **representation**” in British Parliament.

Over time, the disagreements between the two groups only increased bad feelings and violence. Britain’s King George III tried to gain control over the colonists, but failed. A series of events led to a confrontation on April 18, 1775, between British soldiers and colonists at the towns of Lexington and Concord in Massachusetts. Shots were exchanged on the village green in Lexington—no one knows which side fired first. That first shot became known as the “shot heard ‘round the world,” signaling the beginning of war between Britain and its 13 colonies.





Give Me Liberty!

When King George refused to repeal the taxes, it became obvious that the colonies would have to fight for their independence. After the First Continental Congress, Patrick Henry returned to Virginia and made a speech in which he cried, "Give me liberty or give me death!" During the war, "Liberty or Death!" was a Patriot battle cry.

The Second Continental Congress

On May 10, 1775, the Second Continental Congress met at Independence Hall in Philadelphia, Pennsylvania. The **delegates** unanimously chose George Washington, one of the delegates from Virginia and a former officer in the British army, to command the colony's troops. The Congress voted to call the troops the Continental Army, and declared it would be made up of volunteer soldiers from each of the 13 colonies.

Thinking Critically

WHAT does a unanimous vote reveal about the delegates' perception of George Washington?

IN YOUR MIND, how might a unanimous vote benefit the delegates?

Washington's job as commander of the Continental Army wasn't going to be easy. Washington had a ragtag group of farmers, carpenters, and blacksmiths with few weapons and little or no training. These soldiers would be fighting against powerful Britain, with its well-trained and well-supplied army and navy. He expected to fail, telling Patrick Henry, "From the day I enter upon the command of the American armies, I date my fall, and the ruin



George Washington accepts the surrender of troops in Trenton, New Jersey, 1776.

of my reputation." Although he thought his reputation would be ruined, Washington believed so strongly in the cause of American **independence**, he took the challenge as its commander and insisted that he not be paid for his services.

The Olive Branch Petition

The petition that the Second Continental Congress sent to King George III was called The Olive Branch Petition. An olive branch is a symbolic offering of peace.



Not every colonist wanted to be independent from Britain. So while George Washington headed to Concord and Lexington near Boston to lead his new troops, the Continental Congress continued to try to make **amends** with Britain's Parliament. The delegates sent a **petition** to King George III asking him again to grant the colonists rights and to proclaim the colonists as loyal English subjects. King George refused to even read the petition, and declared that the colonists "had proceeded to open and avowed rebellion."

The Patriots Take Ticonderoga

On the same day the Second Continental Congress met, the Colonist soldiers scored a victory over the British at Fort Ticonderoga. A rough, tough farmer named Ethan Allen and his backwoods friends had formed a group called the Green Mountain Boys. The Congress asked the Green Mountain Boys to capture the British fort on Lake Champlain in New York. Another soldier named Benedict Arnold also was ordered to attack Fort Ticonderoga. Both Arnold and Allen wanted to be the leader of the attack, so they argued all the way to Ticonderoga, but they managed to conquer the fort together on May 10, 1775.

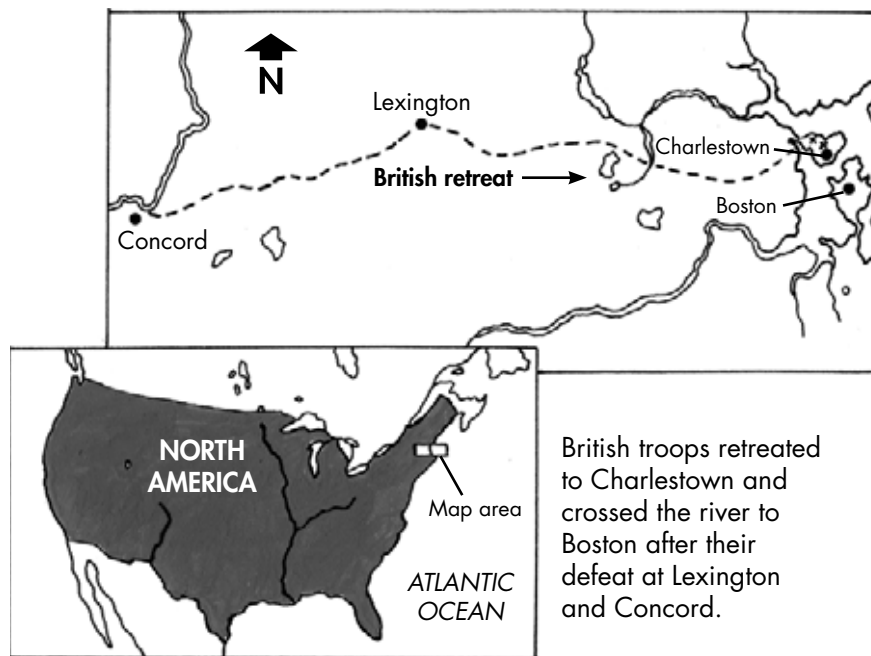


Ethan Allen at Fort Ticonderoga

The victory gave the Patriots a **morale** boost. It also served as an announcement that war had indeed begun. Colonists were now forced to take sides either as **Loyalists**, those who wanted to remain part of Britain, or as **Patriots**, those who wanted independence from Britain.

Bunker Hill (and Breed's Hill)

After the Battle of Lexington, in which “the shot heard ‘round the world” started the first battle of the American Revolution, the British soldiers, led by Major John Pitcairn, had retreated to Boston. The colonist soldiers camped outside Boston, gathering forces. Around 16,000 Patriot troops eventually surrounded Boston, cutting off supplies to the British. With Patriot troops surrounding Boston, British General Thomas Gage worried enemy troops might **fortify** the hills across the Charles River from Boston—Bunker Hill and Breed's Hill in Charlestown.

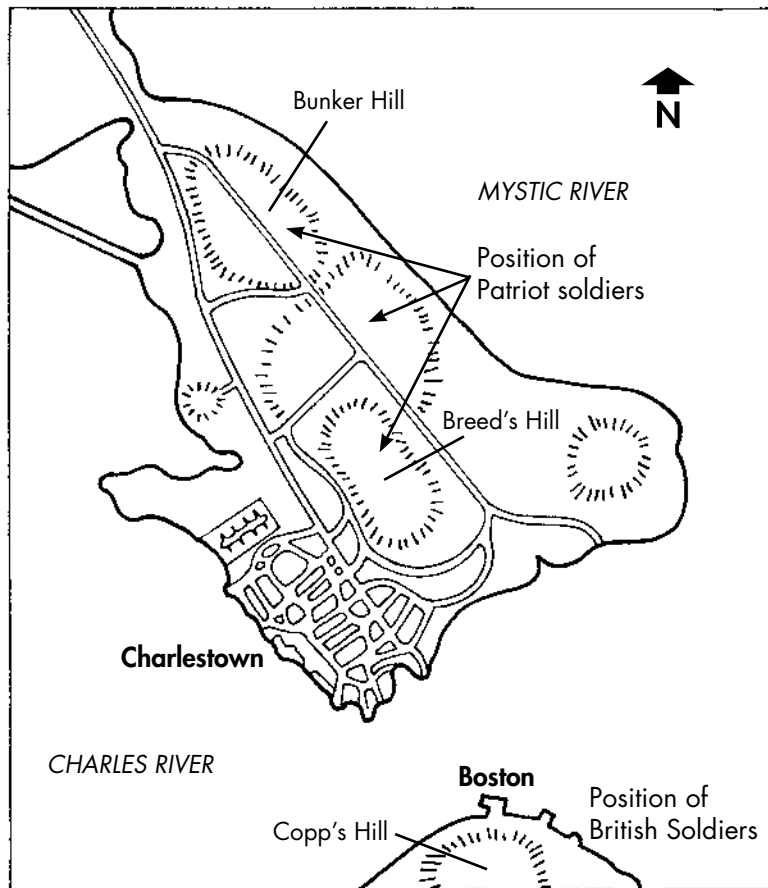


On the night of June 16, 1775, Patriot soldiers dug trenches into Breed's Hill, working all night. By morning, soldiers and trenches covered the hill. The British soldiers moved by ship across the Charles River with cannons blasting. The minutemen were at a disadvantage: they weren't trained well, and were fighting Britain's professional soldiers. The Patriots also had very little **gunpowder**. In order to conserve their ammunition, Patriot officers told their soldiers to make every shot count by waiting until the British were very close before firing: “Wait until you see the whites of their eyes.”

As the British soldiers rushed the hill, the Americans held their fire until the last safe moment—the strategy worked and many British soldiers died. More British troops landed and attacked, with the Americans continuing to wait and then shoot. Finally, after the Americans ran out of gunpowder and had to retreat, the British captured Breed's Hill and Bunker Hill.



The type of musket (rifles) used during the Revolutionary War. Gunpowder was stored inside a powder horn.



The British won control of the two hills at the cost of many British lives. More than 1,000 British soldiers were wounded or killed, while the Patriots lost 441 men. The Patriots gained a big boost in morale even though they lost a battle because they could fight and win a war against professional soldiers. Although most of the action was seen on Breed's Hill, the battle has come to be known as "The Battle of Bunker Hill."

General George Washington's troops held the British captive in Boston for nearly a year. He also sent forces to invade Canada to prevent the British from landing there and sending forces south into New York. The Patriots captured Montreal but failed in their attack on Quebec.

During the winter, Patriots used cannons they captured from the British to attack British soldiers in Boston. On March 17, 1776, the British soldiers and thousands of colonists loyal to Britain left

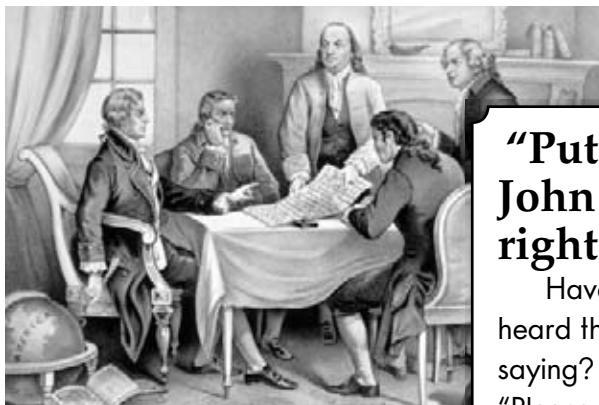
Boston, leaving Washington's troops to march triumphantly into the city.

Thinking Critically

HOW would seeing the Patriots using British cannons cause the British troops to react?

IN YOUR MIND, how could their reaction have been an advantage or disadvantage for the Patriots?





Declaring Independence

Patriot Thomas Paine wrote a pamphlet, *Common Sense*, in which he declared independence to be the only correct choice for the colonists. His booklet sold 150,000 copies in a few months, and swayed many Loyalist colonists to the side of independence.

In June 1776, the Continental Congress selected a committee to write a statement about the colonists' right to be **self-governing**. Thomas Jefferson was chosen as the actual writer. The Continental Congress approved the Declaration of Independence on July 4, 1776. Once passed by each of the 13 colonies, the Declaration of Independence created the United States of America.

"Put your John Hancock right here."

Have you ever heard the above saying? It means, "Please sign this." It dates back to 1776 when John Hancock boldly signed the Declaration of Independence. His large signature encouraged the other 53 signers to sign. If Britain had won, all the signers could have been hung as traitors.

Battling for Freedom

There were dark days ahead for the Patriots, as they lost battle after battle. A month after the Declaration of Independence was signed, the British, under General William Howe, shipped 30,000 soldiers into New York Harbor. The outnumbered Patriots, lost the Battle of Long Island and retreated south across New Jersey to Philadelphia. The British occupied New York City, and won a battle in which Patriots surrendered Fort Washington.

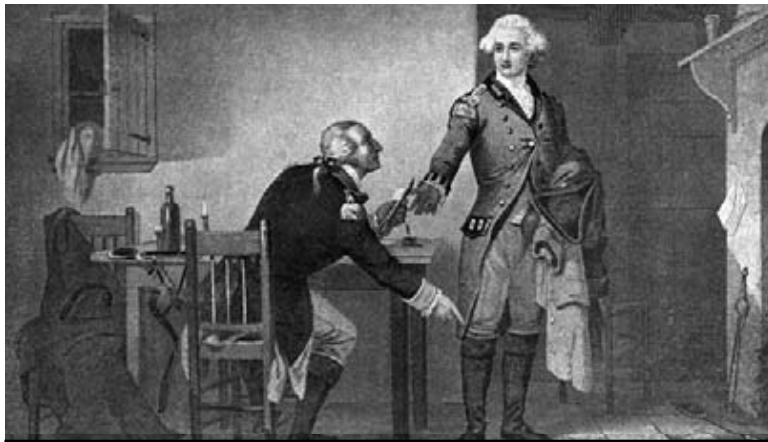


A statue honors Nathan Hale's sacrifice.

A Spy's End

Nathan Hale, a 21-year-old teacher, volunteered to spy on British troops in New York City. Hale was caught and hanged. His last words were: "I regret that I have but one life to give for my country."

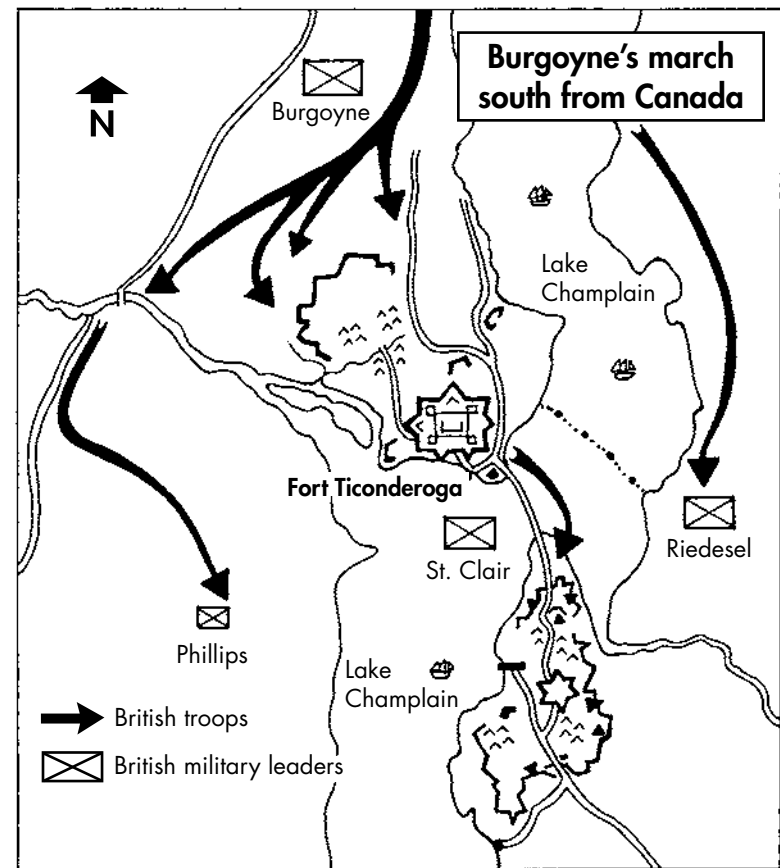
In October 1776, Patriot Benedict Arnold's gunboats were defeated at Lake Champlain in Canada. However, the Patriots fought so fiercely that the British were concerned. Conquering the **rebels** might not be as easy as they'd thought. On December 24, 1776, George Washington and his men ferried across the Delaware River to Trenton, New Jersey. The Patriots won a battle there in less than an hour! A few days later, Washington defeated the British at Princeton, New Jersey. These victories **rejuvenated** the Patriots' morale.



Benedict Arnold's Plot

Benedict Arnold was a brave general, but he felt Congress and the Continental Army had mistreated him. In 1779, Washington put Arnold in charge of a fort on the lower Hudson River called West Point. Arnold planned to sell the fort to the British. When his plan was revealed, he became a traitor and joined the British army.

Britain **retaliated** in June 1777, by moving a large army led by General John Burgoyne south from Canada. Burgoyne planned to conquer the Hudson River area, cutting off New England and New York from the other colonies. On the way, Burgoyne recaptured Fort Ticonderoga. However, Patriot soldiers stopped Burgoyne's **momentum** at the Battle of Saratoga in October, with Burgoyne surrendering 6,000 men.



The Battle of Saratoga was a turning point in the war because it proved to France and other European countries that the Patriots might win the war. France joined the fight against its long-standing enemy Great Britain by sending supplies to the Continental Army. Soon after, Spain would declare war on Britain.

Supplies grew scarcer for the Continental Army. Soldiers often lacked food, clothing, and shelter. The Continental Congress needed **allies** such as France to help supply the troops. George Washington's troops suffered through a cold and hungry winter at Valley Forge, Pennsylvania, before supplies reached them.

In June 1778, after that horrible winter, Washington attacked the British army, now under the command of General Henry Clinton, at the Battle of Monmouth. Neither side won the fight, which was the last major battle in the northern colonies.



A depiction of the legend of Molly Pitcher, a woman who took her husband's place after he died in battle.

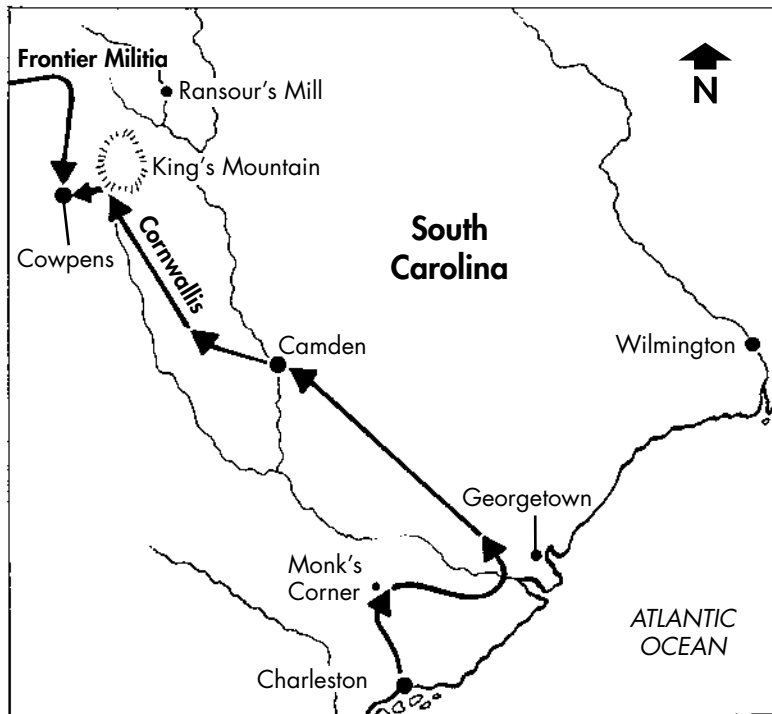
Southern Battles

British forces captured Savannah, Georgia, in December 1778. Then they attacked and captured Charleston, South Carolina, in May 1780. They won yet again at Camden, South Carolina, in August 1780. Many colonists in the southern colonies were Loyalists. Although Britain was winning the South, the Patriots would not give up.



It's a Grand Old Flag

Congress decided on a flag for the new republic on June 14, 1777. It was to have thirteen stars on a blue field and thirteen red and white stripes. Many people believe Philadelphia seamstress Elizabeth "Betsy" Ross sewed the first national flag. However, no real evidence supports this story.



The tide of the war started to turn in favor of the Patriots in October when they won a battle at King's Mountain, South Carolina, in a speedy 65 minutes. They again won battles at Camden and Cowpens. Next, they forced British General Charles Cornwallis north into Virginia. Cornwallis had aided the British victory at Long Island and had taken command of British troops in the south. The Patriots alliance with the French began to pay off. French soldiers helped hold the British back and fought alongside colonists as part of the troops Washington led into Virginia.



Cornwallis surrenders to Washington at Yorktown.

The most important battle of the war was about to begin. French ships drove off the British ships sent to rescue Cornwallis at Yorktown, on the coast of Virginia. The French fleet also brought extra soldiers to help the fight on land. The French and Patriots troops moved into Yorktown, surrounding the British army. The British fought for three weeks, before surrendering on October 19, 1781. The Revolutionary War was over.

The Patriots had won their war and were now independent from Britain. Now a group

Thinking Critically

WHAT do you consider to be the greatest challenge faced by people of any new nation?

IN YOUR MIND, why might one challenge be greater than others?

of colonies that was used to being supported by another country had to come together and build a brand new nation.

Major Players in the Revolutionary War

George Washington:

Commander of the Continental Army, he later became the country's first president



George Washington

Thomas Gage: Commander of British troops in the colonies; his army was trapped in Boston after battles at Lexington and Concord

John Burgoyne: British commander of the northern army, he captured Fort Ticonderoga but was defeated at Saratoga

King George III: 22 years old when he became Great Britain's king, he was determined to keep the colonies at all costs.



King George III

Thomas Jefferson: Wrote the Declaration of Independence

Thomas Paine: Wrote a booklet called *Common Sense*, which inspired many colonists to choose independence

William Howe: Commander of the British army in North America, 1775–1778

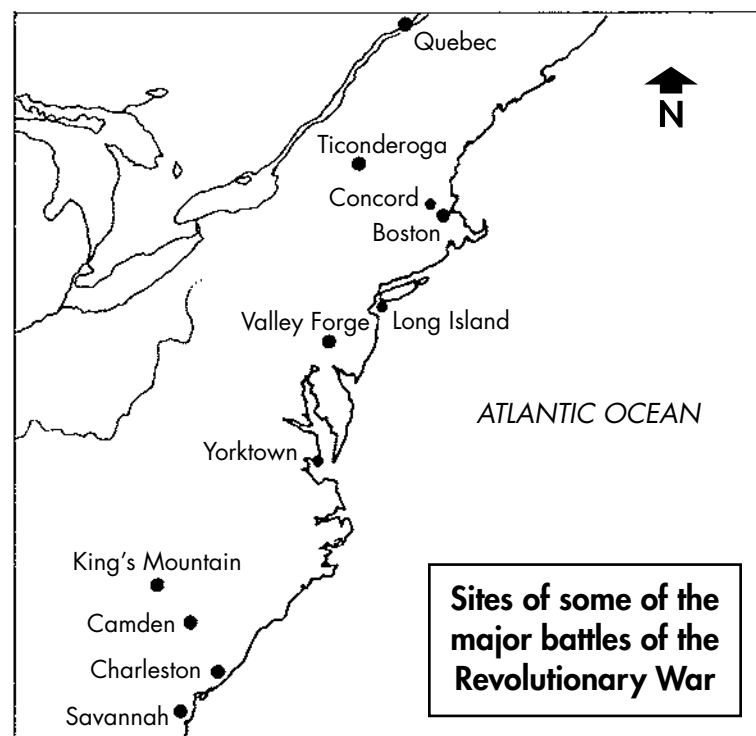
Henry Clinton: Replaced Howe as British commander in 1778

Charles Cornwallis: British general under Henry Clinton, Cornwallis was in charge of the South. He surrendered at Yorktown on October 19, 1781.



Charles Cornwallis

Marquis de Lafayette: A young Frenchman who served as a commander under Washington, instrumental in attaining the French military assistance that helped win the war



Glossary

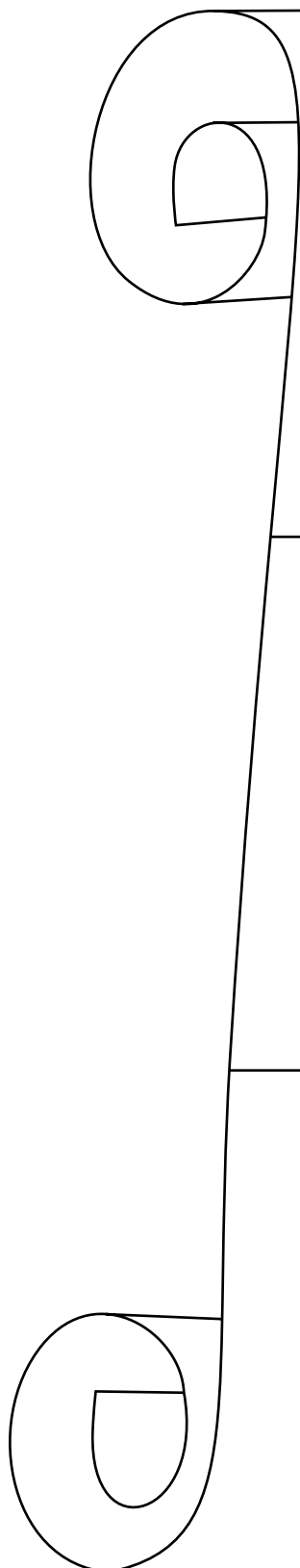
allies	two people or groups, often countries, that join together for a common cause (p. 4)
amends	acts that make a bad situation improve (p. 7)
colonists	those from one country who settle in a new place controlled by that country (p. 4)
delegates	people sent to act for a group or another person (p. 5)
fortify	to make stronger or more resistant to attack (p. 9)
gunpowder	an explosive substance used in guns and cannons (p. 10)
independence	the quality of being free from something, such as foreign rule (p. 6)
Loyalists	colonists who did not want independence from Great Britain (p. 8)
momentum	strength or force that keeps something moving or growing (p. 16)
morale	the mental well-being of an individual or a group (p. 8)
Patriots	colonists who wanted independence from Great Britain (p. 8)
petition	a formal request, usually made in writing (p. 7)
rebel	someone who fights against the government (p. 10)
representation	having a voice, often in government (p. 4)
retaliated	to have responded to an act (p. 16)
self-governing	having the right to create and enforce laws without outside interference (p. 13)

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Name _____

INSTRUCTIONS: In the first row, write what you already know about the American Revolution. In the second row, write what you would like to learn about it. After you finish reading, fill in the third row with information you learned.

	What I know
	What I want to know
	What I learned

BATTling for Independence • LEVEL Y • 1

SKILL: KWL/ASK AND ANSWER QUESTIONS

Name _____

INSTRUCTIONS: Use clues from *Battling for Independence* and what you already know to make inferences about the events or characters in the book.

	Story Clues	+	What I Know	=	Inference
9					

BATTLING FOR INDEPENDENCE • LEVEL Y • 2

SKILL: MAKE INFERENCES

Name _____

INSTRUCTIONS: Circle the compound adjectives in each sentence. Then underline the noun or nouns that they describe.

1. "Liberty or Death" became a well-known cry during battle.
2. General Gage was a high-ranking British officer.
3. He and his backwoods friends formed the Green Mountain Boys.
4. The independent-minded colonists fought for their rights.
5. The outnumbered Patriots lost the battle.
6. The homesick soldiers continued to fight for independence.
7. A 21-year-old teacher volunteered to spy on British troops.
8. France joined the fight against its long-standing enemy.



Name _____

INSTRUCTIONS: Define each base word using a dictionary. Then fill in the blank in each sentence by adding a prefix to a base word. Use the definitions of the base words and context clues to choose the correct word for each blank.

agreement _____

equal _____

familiar _____

like _____

obey _____

place _____

sure _____

treat _____

BATTling FOR INDEPENDENCE • LEVEL Y • 4

dis- mis- un-

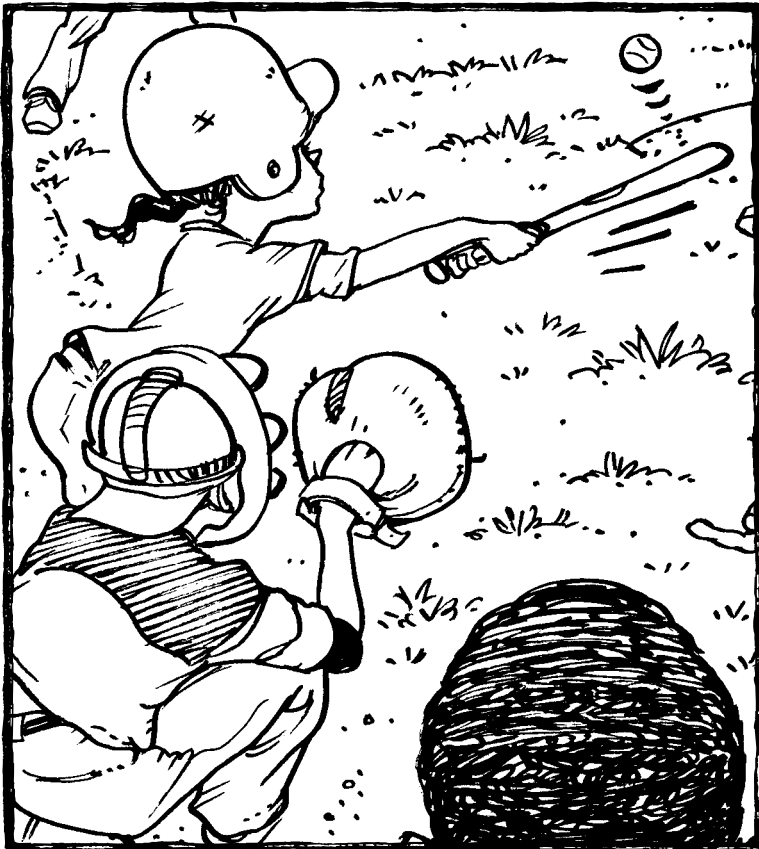
1. The soldiers did not argue with or _____ orders from their commander.
2. An _____ number of Patriot and British soldiers were killed at the Battle of Bunker Hill.
3. The _____ over taxes and rights led to the American Revolution.
4. Patriots likely felt _____ toward Benedict Arnold after he joined the British Army.
5. At first, General Washington was _____ whether the Colonial Army would be successful against the British.
6. If there were feelings of _____ toward George Washington, the delegates would not have unanimously voted for him.

SKILL: PREFIXES

Miltie Math-head Takes the Mound

A Reading A-Z Level Y Leveled Reader

Word Count: 2,479

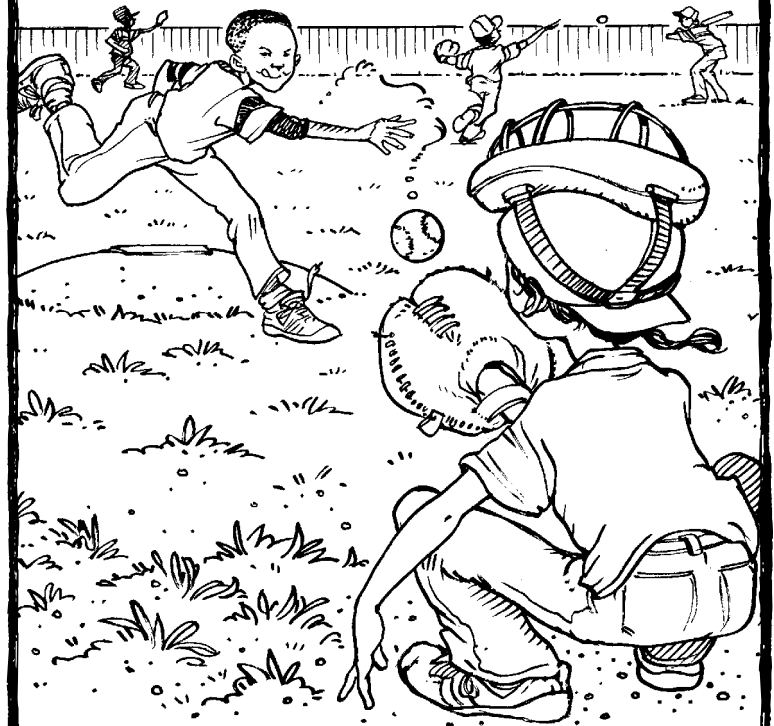


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Reading Recovery	28
DRA	N/A

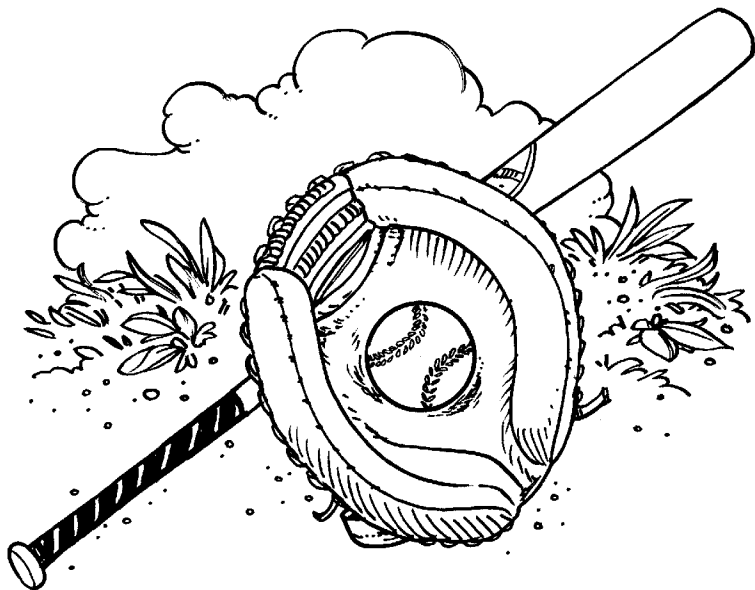


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Miltie Pitching?

If you live anywhere near Cobb County, you probably know my pal Milton Meyers as Miltie Math-head, boy-math-whiz-and-football-hero. He took out a rushing linebacker the size and speed of a runaway train in a championship football game that led our team to victory. How did a little guy, who admits to having two left feet and ten left thumbs, do it? Being a math whiz, he used math: angles, arcs, and algebra. Add in a double dose of guts and determination and you have the stuff of which legends are made.

Miltie's athletic ability hadn't improved much since we won that Pee Wee Football championship, but when you're told over and over that you're a sports legend, you start to believe it. Maybe that's why Miltie's **ego** had swollen up to the size of a basketball—which he still couldn't shoot into the hoop unless he stood on a stepladder, and even then, his chances were **abysmal**.

That didn't matter much now, this being baseball season. What did matter is that all the guys wanted Miltie on the team, and not just as the **statistician**, but as a player.

We're talking about the same Miltie who, according to his records, had a batting average of .100, which he explained is pronounced "one hundred."

"It has to do with the **decimals** going into the **thousandth place**, Dan." He explained, "That's an average of one hit for every ten times at-bat. By comparison, you have an impressive .400 average, which is four hits for every ten times at-bat. That can be crunched down to the **lowest common denominator**, which is precisely two for five."



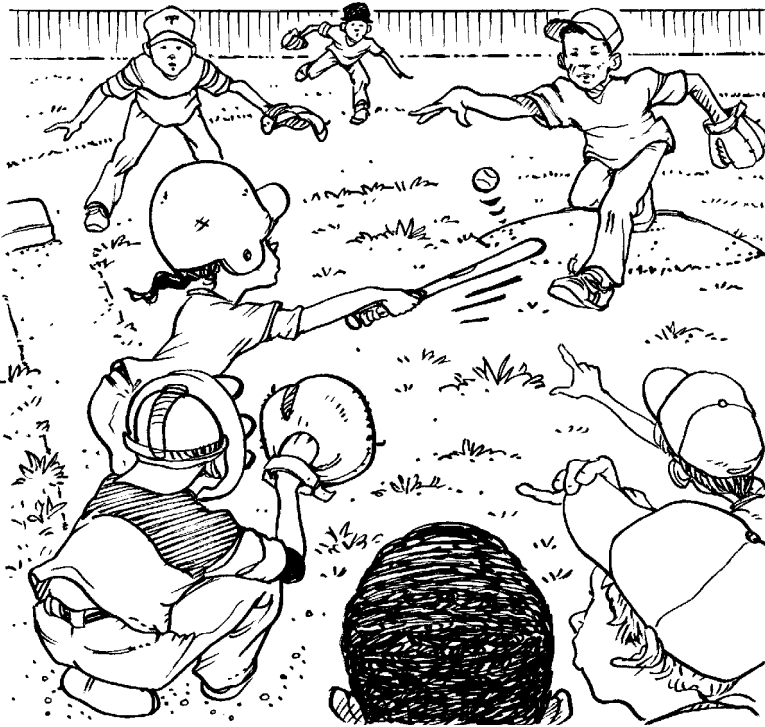
Miltie's **computations** tell you that I'm good with the stick. However, most people know Dan-the-Man Dugan—that's me—for my powerful arm (I'm the quarterback on the football team and a pitching ace). Miltie could reel off my strikeouts-to-walks **ratio** and **E.R.A.** (earned-run average), no sweat, and would be delighted to show you how to do it, too, you know, compute those figures.

I don't care what the records say. I just do what's best for the team. Miltie managing? That's a no-brainer with his skills in math and knack for organization, but Miltie Math-head on the **mound**? Nope, especially not when marching at the head of the Founder's Day parade is at stake!

The Secret League

Every spring, kids from diverse neighborhoods across Cobb County put together their own ball teams to participate in an exclusive league: no matching uniforms, phony pep talks, or parents on the sidelines hollering, “Keep your eye on the ball, sweetie.”

We just go out and play and have a great time. We settle any arguments like regular gentlemen and regular ladies (those who are girls, since the teams are co-ed).



The only adult who knows about our secret league is Old Man MacGruder, our **ump** and a pro from the way-old days. He shows us trick pitches and tells us about stuff that happened when Major Leaguers used to ride trains to their games.

The league has six teams, which play each other twice. The team with the best record wins the honor of marching, dancing, and laughing at the head of the Founder’s Day parade. No trophies or names in newspapers, just **dibs**, and that’s a big deal to us. Everyone who is in-the-know knows who’s tops in town, and when everyone knows, you don’t need any trophies or plaques or ribbons or names in newspapers.

Our special league team, the Hilltop Aces, is the one Miltie was managing and wanting to pitch for. When I objected, Jimmy-Don't-Look-Now Gordon, our speedy centerfielder said, "What's the matter Dan, afraid you won't be The Man?" Then Billy "Beefalo" Beffalini, our big first-baseman added, "Maybe you should bone up on your math if you want to pitch for us."

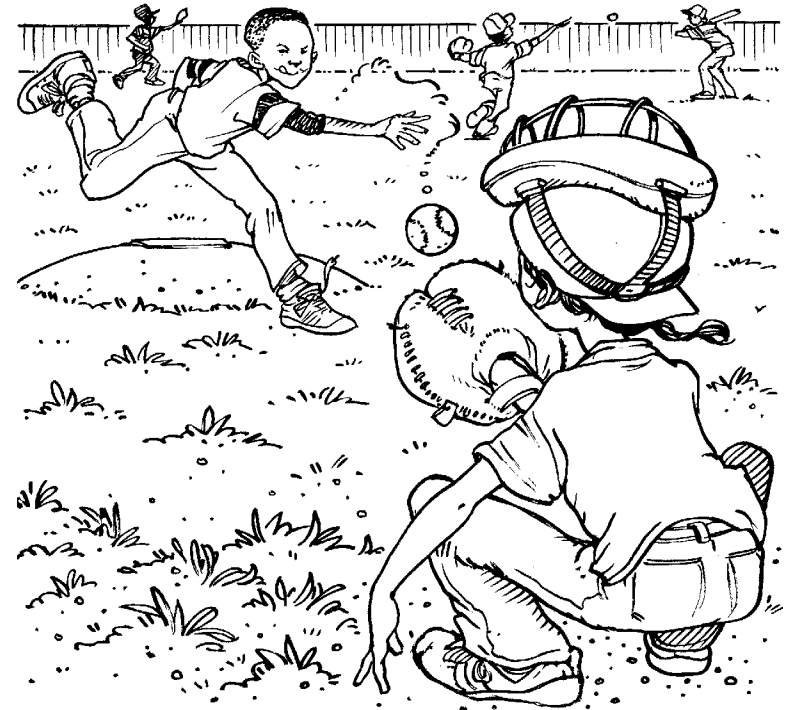
It takes more than some prodding to get me riled. Besides, Miltie and I have been buddies since second grade.

"If that's what you guys want, then I'm fine with it," I said, hitting everyone grounders while Miltie practiced pitching with Mary Beth, our catcher. Yes, Mary Beth is a girl and not very big either, but she is quick, tough, and smart.

"Fire-hard, Miltie-boy," she said, right before Miltie tossed a fastball that kind of wobbled into her glove. "Thataway, kiddo," she encouraged anyway. Miltie smirked and shouted, "Now here comes the heat."

I'm not exaggerating much when I say that Jimmy could have sprinted from the pitcher's mound to home plate faster than Miltie's pitch.

"Another strike!" cried Mary Beth.



"That's my eighth strike in ten attempts," Miltie announced to Mary Beth, louder than necessary. "That's an accuracy rating of 80 percent. Dan throws about 70 percent strikes."

"That means Miltie is 10 percent better," said Jimmy.

"Miltie, Miltie, Miltie," chimed the team, just as they did after the big football game and have been singing ever since. So I sighed and kept my mouth shut, knowing that there is more to pitching than throwing strikes.



The Losing Streak

The Hilltop Aces started-off impressively, scoring three runs in the top of the first inning of the first game. Miltie then graced the mound and hurled strike after strike across the plate. However, Old Man MacGruder didn't get to call a one because the other team whacked and walloped Miltie's slowballs. When the game ended, they had scored 13 runs, and I doubt that you would want to tabulate Miltie's E.R.A.

"We'll get them next time," said Mary Beth.

"Sure," said Miltie, sounding as if some of the air had escaped out of his basketball-sized head, "I'll keep practicing, and we'll recover."

"We will, pal, we will," I said. We did improve, but not sufficiently. We lost 9 to 7 in the next game, and then got clobbered 14 to 2 by the Mudflat Maulers—our cross-town rivals and the squad we beat to win the football championship.

"Hey, Math-head," barked their captain, Maurice, "The 618 Express," whom Miltie took out in the final play of the football game. "Why don't you do the math? As a pitcher you're a zero—ha!"

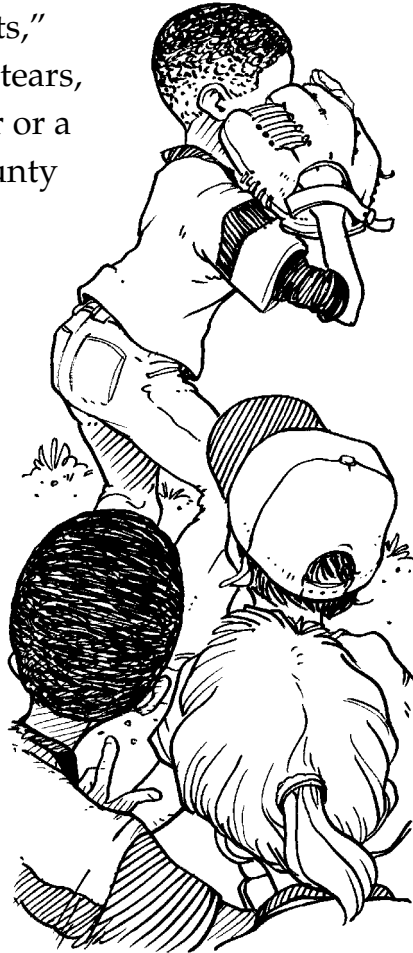


We were now zero and three, yet you don't have to be a mathematical genius to deduce that we had a problem and who it was. The guys started grumbling, but like I said before, I kept my mouth shut. Mary Beth led another "Miltie, Miltie, Miltie" cheer after 618's taunts, but no one joined in.

"Let's examine the facts," said Miltie, choking back tears, "Clearly, I'm not a pitcher or a ballplayer but just a . . . runty math-head with a" Miltie then darted away so we wouldn't witness his blubbing.

"Ah, the Hilltop Aces are better off without him," said Beefalo. "Dan, you'll take over, won't you?"

"Sorry, Billy, but you'll have to get on without me. I've got to find something before I lose it."



Can a Fatball Help?

I searched all over for Miltie and finally spied him—and Mary Beth—chatting with Old Man MacGruder.

"The ultimate key to pitching isn't speed or power or strength, my boy," said Old Man MacGruder, "it's how you control the at-bat."

Like I said as you recall, there's more to pitching than throwing strikes. Pitching is a brain game, not a game for the feeble-minded. I knew Miltie could grasp it—eventually.

"Did I tell you about the time I struck out Mickey Mays, spinning him around, making him look foolish?"

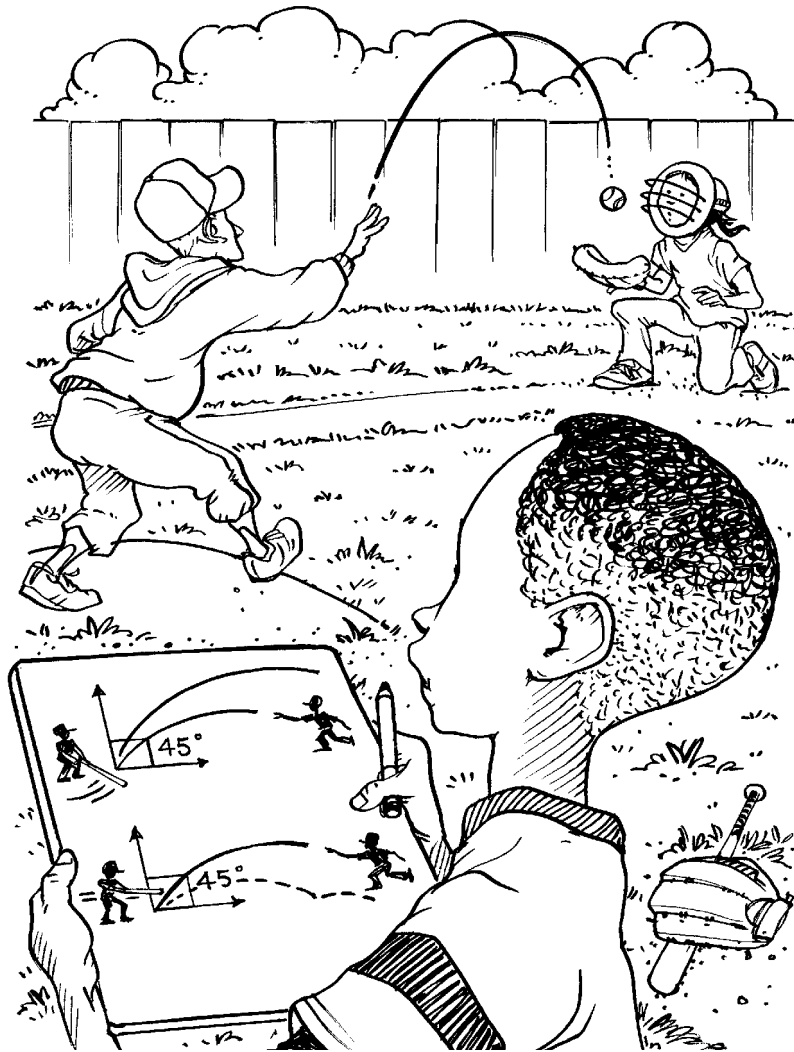
"Mickey Mays," said Mary Beth, "the Hall of Famer?"

"I got him with my fatball."

"Don't you mean fastball, Mr. MacGruder?" questioned Miltie.

"Nope, fatball. It's really a super slowball that you lob in, like a softball, so it comes flopping down shoulder high, looking as plump as a stuffed turkey just before Thanksgiving."

"A high arcing pitch," said Miltie, his brain gears whirring, "has the ball come crashing in at a 45-degree angle. If you upper cut it, you can crush the ball far, but with a solid, level baseball swing, you're more likely to hit a weak grounder."



Then I saw Miltie's eyes get all squinty. He was doing **calculations**—I told you that boy had a brain! "Our team can still lead the Founder's Day parade, Dan, if we can win nine games in a row."

An improbable long-shot, I thought, but said, "Sure, we can do it."

"Of course we'll do it," said Miltie. "You're pitching from now on."

"What?"

"I'll still be manager," said Miltie, "and a reserve player, but it's best for the Aces."

I didn't argue and neither did anyone else. We stormed through the other teams over the next few weeks and bumped our record up to eight and three, going into the last game against the Maulers, who were also eight and three. Therefore, the winner of this game would have dibs.



Pitching Changes

It looked like a cinch for us because I was in fine form, holding the Maulers to one run in five innings, knocking in three runs and scoring twice myself.

"Dan," said Miltie, "do you realize that you have factored in 100 percent of our runs?"

At this point, I wasn't interested in numbers, only in letters—particularly, a W. But it was the top of the final inning and we stacked the bases loaded with two outs, and I was up to bat.

"Time out!" called The 618 Express, "Now pitching is 618."

Some people gossip or whisper among themselves that 618 got his nickname from his batting average. He was the greatest slugger in our league, but he certainly wasn't a pitcher, so what was this **substitution** all about?

I found out on the first pitch: 618 plunked me on the elbow of my pitching arm. I collapsed in pain.

"Sorry," said 618, but his eyes were saying, "Ha-ha."

"Take your base," said Mr. MacGruder.

Jakey-boy scored a run and then the next batter popped out. I went to the mound for my warm-up tosses, thinking the Hilltop Aces were ahead 6 to 1 and only three outs away from triumphantly marching at the head of the parade. But I could barely clutch the ball much less heave it. Old Man MacGruder took a jaunt out to the mound, where Miltie and Mary Beth gathered shortly thereafter.

"Son," said Mr. MacGruder, "you're a talented pitcher with a heck of an arm, but right now your body is telling you 'no more pitching' no matter what your heart is saying. Now I'm saying you need to wrap some ice on that elbow and rest."

"Now?" I said.



"Now," said Miltie, "Beefalo, you're pitching."

"Yes!" came a cry from the Mauler bench, and I didn't have to crane my neck to see that it was 618. The guy had beamed me on purpose, just to boot me out of the game, even if it meant sacrificing a run. What a stinker. His plan worked, and the Maulers put together a rally and knocked in two runs. Beefalo, rattled, got one out but gave up two walks.

Miltie called a time-out and said, "Now pitching is . . ."

"Jakey-boy?" said Beefalo.

"Mary Beth," said Miltie, "She's been practicing."

"But she's a girl!" said Beefalo so loud you could almost not hear another deafening "Yes!" ring out from the Mauler bench. When Mary Beth struck out the first batter, it looked like another genius move by Miltie Math-head, but then she gave up two runs, making it 6 to 5 with 618 due up. Miltie called, "Time," and walked to the mound nearly as slowly as one of his pitches. He whispered something to Mary Beth, who handed the ball over. What's weird is that instead of looking disappointed, she beamed with pride. What now?

The Final Pitching Change

"Now pitching," said Miltie, "is Milton Meyers."

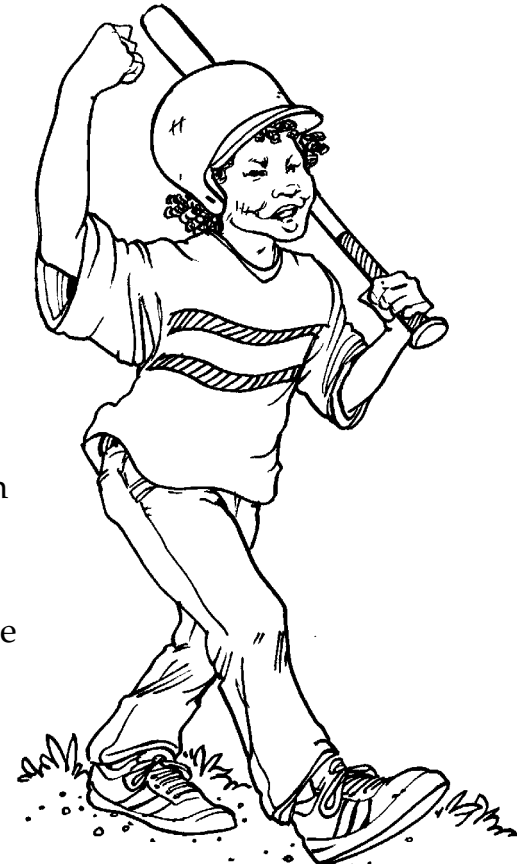
"No!" cried Beefalo.

"No!" cried Jimmy.

"Yes!" cried 618, strolling in from the on-deck circle. "The 618 is right on time."

If there was one guy you didn't want to face with the bases loaded and the game on the line, it was 618, and here was Miltie Math-head on the mound. If only my elbow didn't hurt so much . . . maybe I should pitch with my other arm . . . maybe I should . . .

"Go, Miltie!"
I cried.



Miltie looked in for the sign from Mary Beth, who had gone back to catching. Then he went into his **windup** and threw . . . a blooper pitch? The ball arced high and floated down to the plate like a snowflake, and the Mauler's 618 froze, not quite believing what he was seeing.

"Strike one!" cried Mr. MacGruder.

"What was that?" said 618.

"That's Miltie Math-head's Super Blooper," said Mary Beth. "Both of us have been practicing pitching."

"Try that again and let's see what happens," snarled 618.

Miltie floated another blooper, but this time, 618 stepped toward the ball and smacked it 300 feet, only it went foul by a good 30 feet.

"Strike two," said Mr. MacGruder with a giggle, though if you asked him about it, he'd tell you he was just clearing his throat.

"Maurice," said Miltie, "that pitch was way inside on purpose and even though you hit it well, it had no place to go but foul. If you did the math, you'd understand that."

"If you're such a hot-shot, Math-head, then throw the next one over the plate."

"Okay," said Miltie.

The minus side of playing for dibs in our special, secret baseball league is that if you talk about what happens, then adults and other people will end up knowing about it. Then there would be trophies and names in newspapers, and marching at the head of the parade wouldn't mean that much. So we never talk about what happens, and that's too bad, especially when what happens is the stuff of legends.

So, even if you live near Cobb County, you probably won't hear how Miltie, being a straight-up guy, did exactly what he told 618 he'd do. He fired a strike right over the plate.

He just didn't throw the type of strike 618 was expecting. You see, Miltie threw his fastball. I still think Jimmy could have run from the mound to the plate faster than the pitch, yet compared to the bloopers Miltie had been throwing, his fastball actually seemed fast.

The 618 Express, laying back for the blooper with his bat held low, simply couldn't adjust his swing in time to catch up with Miltie's fastball.



"Strike three!" cried Old Man MacGruder,
"The Hilltop Aces win."

Dibs! We were going to lead the Founder's
Day parade all because of Miltie Math-head.

"Miltie, Miltie, Miltie," the team shouted, as
we carried him around the bases in a victory lap.

"Thanks, but I couldn't have done it without
all of you," said Miltie, his ego looking just about
the right size again.

"And, of course, math," I added.

"Actually, Dan, this time I used psychology—
there's a lot more to pitching than just throwing
strikes."

Glossary

abysmal	very bad (p. 5)
calculations	working things out using math (p. 16)
computations	calculations (p. 6)
decimals	fractions, or parts, of numbers (p. 5)
dibs	slang for claiming exclusive right to something (p. 8)
earned-run average (E.R.A.)	dividing the total number of runs allowed by the total number of innings pitched, and multiplying by nine (p. 6)
ego	one's idea of oneself (p. 5)
lowest common denominator	the smallest number that can be divided exactly, without a remainder (p. 5)
mound	the raised ground a player pitches from (p. 6)
statistician	one who records the number facts of the game (p. 5)
substitution	an exchange (p. 17)
thousandth place	three places after the decimal point (p. 5)
ratio	a comparison between two numbers or quantities (p. 6)
ump (umpire)	one who officiates a baseball game (p. 8)
windup	the movement a pitcher goes through before releasing the ball (p. 21)

Name _____

INSTRUCTIONS: Write a prediction in the *Make* column. Revise the prediction as you read in the *Revise* column, and write a check mark in the *Confirm* column if you can confirm your prediction after reading. Record the events that actually happen in the *Actual* column.

Make	Revise	Confirm	Actual

MILTIE MATH-HEAD TAKES THE MOUND • LEVEL Y • 1

SKILL: PREDICTION

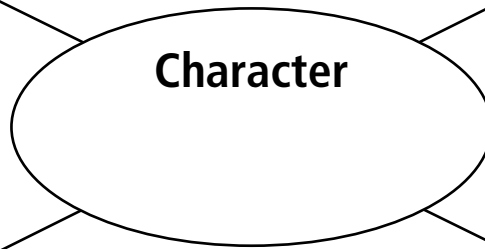
Name _____

INSTRUCTIONS: Write *Miltie* in the circle labeled *Character*. In each box, list a character trait to describe Miltie along with story clues that helped you identify the trait. Then on the back of the worksheet, list two characters traits and supporting clues that describe Dan.

Trait:
Clues:

Trait:
Clues:

MILTIE MATH-HEAD TAKES THE MOUND • LEVEL Y • 2



Trait:
Clues:

Trait:
Clues:

SKILL: ANALYZE CHARACTERS

Name _____

INSTRUCTIONS: Read the sentences below and decide if they contain dashes or hyphens. Then write dash or hyphen in the appropriate column. If the sentence includes a dash, explain how the dash is used in the sentence.

Sentence	Dash or Hyphen?	Explanation
Miltie's ego had swollen up to the size of a basketball—which he still couldn't shoot into the hoop.	Dash	It provides information about Miltie's talents in sports.
The 618 got his nickname from his batting average—he was the greatest slugger in our league.		
Everyone who is in-the-know knows who's tops in town.		
We got clobbered 14 to 2 by the Mudflat Maulers—our rivals.		
Then I saw Miltie's eyes get all squinty—he was doing calculations.		
I went to the mound for my warm-up tosses.		

SKILL: DASH

MILTIE MATH-HEAD TAKES THE MOUND • LEVEL Y • 3

Name _____

INSTRUCTIONS: Read the sentences below and decide which ones contain a simile. (Remember, a simile is a comparison that uses the word *like* or *as*.) Below each simile, write which two things are compared. If the sentence does not contain a simile, write *no simile*. Then write two similes that describe something or someone.

1. The linebacker was as fast as a runaway train.

2. As a pitcher, you're a zero . . . ha!

3. The ball arced high and floated down to the plate like a snowflake.

4. Miltie's ego was as large as a basketball.

5. Pitching is a brain game.

6. Miltie's pride beamed like a ray of sunlight.



1. Simile #1

2. Simile #2

American Sports Legends

A Reading A-Z Level Y Leveled Reader

Word Count: 2,285



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Jim Thorpe played baseball for the New York Giants.

The Greatest Athlete of the 20th Century: Jim Thorpe (1887–1953)

Who would you say was the greatest athlete from the last century? Soccer's Pele? Basketball's Michael Jordan? Hockey's Wayne Gretzky?

Good choices. These record-setting superstars **revolutionized** their sports and deserve to be in the running for that No. 1 spot. But the athlete named the greatest of the great was Jim Thorpe, a Native American born in Oklahoma in 1887. He played professional baseball, was the biggest football star of his day, and performed legendary feats in track and field.

Let's go back to 1912, Stockholm, Sweden, during the Summer Olympics . . .

The Native American from the Sac and Fox tribes crouches at the starting line. "On your mark," calls the starter. A hint of a smile curls from his lips. "Get set." Fire dances in his eyes.

*Jim bursts out of the blocks in the 200-meter dash, the third of five events in the **pentathlon**. He already scored an easy victory in the long jump, but placed a*



disappointing fourth in the javelin throw. This race must be mine, he thinks as he sprints down the straightaway.

But the competition is stiff. He can't seem to pull ahead . . . until the finish line. Jim Thorpe wins by a hair!

Jim crosses the finish line to win a race.



Jim Thorpe tackles the ball carrier.

Before he appeared at the Summer Olympics of 1912, Jim Thorpe was a celebrated football star. The All-American halfback from Carlisle Indian College in Pennsylvania thrilled crowds with his blinding speed and strength. On the **gridiron**, he could just as easily run over would-be tacklers as run past them. He was also his team's punter and place kicker.

Thorpe starred on the school's baseball and basketball teams, too. He excelled in golf, tennis, swimming, and just about any game he tried.

At the 1912 Olympics, Thorpe represented the United States in the two most grueling track and field events: the pentathlon (five events) and the decathlon (ten events).

Do You Know?

The pentathlon and decathlon are two of the most difficult Olympic events. The variety of skills needed tests an athlete's all-around ability.

Pentathlon: long jump; javelin; discus; 200-meter run; 1,500-meter run

Decathlon: 100-meter run; long jump; high jump; shot put; 400-meter run; 110-meter hurdles; discus; javelin; pole vault; 1,500-meter run



Jim Thorpe in the long jump

Over the course of a few days, Jim Thorpe achieved the unimaginable. He won four of the five events in the pentathlon, set a world record for the decathlon, and won the gold medal in both events! No one in Olympic history had done this before Jim, and no one has done it since.

When King Gustav V of Sweden called Jim to the podium to get his medals, he said, "You, sir, are the greatest athlete in the world."

Always a man of few words, Jim replied, "Thanks, King."

Jim Turns Pro

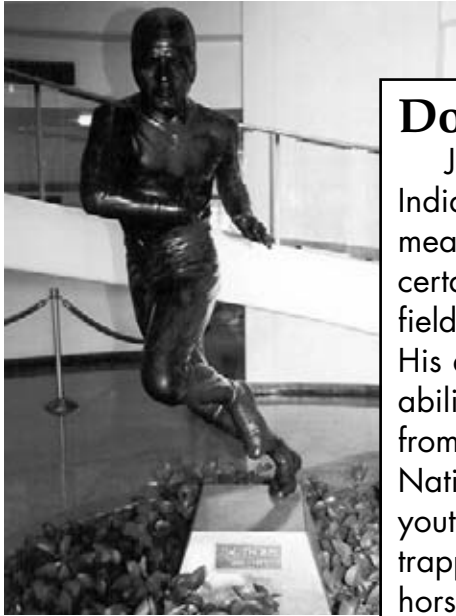
After the Olympics, Jim was famous the world over. He received a letter of congratulations from the White House. Professional sports teams offered him **lucrative** contracts. He turned them down to return to Carlisle to play one more season of college football. What a year! He scored twenty-five touchdowns and made a total of 198 points. He married his college sweetheart, too.



Jim played baseball from 1913-1919.

Then, in 1913, he became a professional baseball player with the New York Giants. For six seasons, he patrolled the outfield for three different teams, batting as high as .327.

Although Jim was good at baseball, he preferred football. In 1915, when professional football was in its infancy, Jim joined the Canton, Ohio Bulldogs. He led his team to championships three times: in 1916, 1917, and 1919, while playing baseball in the summer months.



Jim's statue in the Football Hall of Fame

Do You Know?

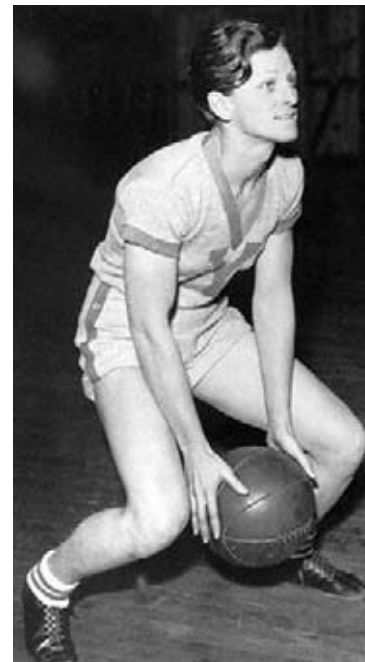
James Francis Thorpe's Indian name, Wa-Tho-Huk, means "bright path." Jim certainly lit up playing fields wherever he went. His all-around athletic ability is said to have come from mastering traditional Native American skills as a youth: hunting, tracking, trapping, lassoing wild horses, and playing follow-the-leader games.

In 1920, Jim became the first president of the American Football Association, which later became the National Football League. His on-field **exploits** popularized the game. To excite the fans at half-time, Jim would stand at the fifty-yard line and drop-kick a ball over the goal posts. Then he would face the other direction and do it again!

Today, a statue of Jim Thorpe greets visitors to the Football Hall of Fame. It is a tribute to the founding father of professional football and its first true star, the greatest athlete of the 20th century.

The Other Babe: Mildred Didrikson Zaharias (1911–1956)

Jim Thorpe may have been named the greatest athlete of the 20th century. But half the population—the female half—might nominate another candidate. Mildred "Babe" Didrikson was an all-around athlete who dominated women's basketball, track and field, and golf in the 1930s, 40s, and 50s. More importantly, she was a rough-and-tumble competitor in a time when women, even athletes, were supposed to be dainty and ladylike.



Babe shoots freethrows.

Babe Didrikson was born in Texas in 1911, the sixth of seven children. In high school, she was a standout in volleyball, baseball, swimming, tennis, and especially basketball, the most popular women's sport of the time. Her high school team never lost a game. She often scored thirty points when twenty was considered a respectable total—for the whole team!



Babe Didrikson, second from left, smashed another world record when she sprinted the 80-meter hurdles in 11.7 seconds.

Babe's interests shifted to track and field. A firm believer in strength training, Babe lifted weights, an unheard of practice for women back then. Babe's serious workouts and natural abilities paid off at a national track meet in July 1932. She entered eight events and won five. What's more astonishing is that she single-handedly won the meet, competing against teams with twenty members.

A few weeks later at the Summer Olympics, Babe won gold medals and set world records in the 80-meter hurdles, javelin, and high jump. Now a celebrity, Babe put together a female basketball team that traveled the country playing men's teams.

No Game She Can't Play

Babe's greatest accomplishments were still to come in yet another sport—golf. Although Babe didn't pick up a club until age 23, she practiced with characteristic determination. She would hit 1,000 balls a day, taping over blisters that formed on her hands. A year later, in 1935, she won her first championship.

In the next twenty years, Babe won eighty-two tournaments, including an **unprecedented** seventeen in a row in 1946 and 47. She helped found the LPGA (Ladies Professional Golf Association) in 1950.

In 1953, while at the top of her game, Babe was diagnosed with cancer and had an operation. Her doctors thought she would never play again, but she was back on the pro tour a few weeks later.

It is the 18th hole of the Servin Women's Open Tournament in Miami Beach. Babe Didrikson's booming first shot lies in the center of the fairway. She takes out a 5-iron and hits sharply and crisply, almost manly. The white ball soars high and straight before landing on the green. Babe pulls back her putter and sinks the ball. She has won the tournament, just six months after cancer surgery.

Unfortunately, the cancer returned a few years later, and Babe passed away at age 45. She left behind a glittering legacy that includes membership in two Halls of Fame: golf and track and field. More lasting was her independent spirit.



Babe drives for the green.

Babe Didrikson was a courageous, outspoken individualist who blazed a path for future female athletes by playing her own way.

Do You Know?

- Didrikson got her Babe Ruth-inspired nickname as a youth for hitting five home runs in a softball game.
- She excelled at golf, track and field, softball, baseball, volleyball, tennis, swimming, diving, bowling, and billiards. "The only thing I don't play," Babe joked, "is dolls."
- She was voted "Woman Athlete of the Year" six times. No other person has been honored so often.



Baseball's Most Daring Player: Jackie Robinson (1919–1972)

What would Major League Baseball be like today without such superstars as Frank Thomas, Derek Jeter, and Alex Rodriguez? How might the Hall of Fame look without Hank Aaron, Willie Mays, Roberto Clemente, and so many other brilliant African-American and Latino ballplayers?

Such questions would not have been asked were it not for the courage and determination of Jackie Robinson. In 1947, he became the first African-American to play Major League Baseball.



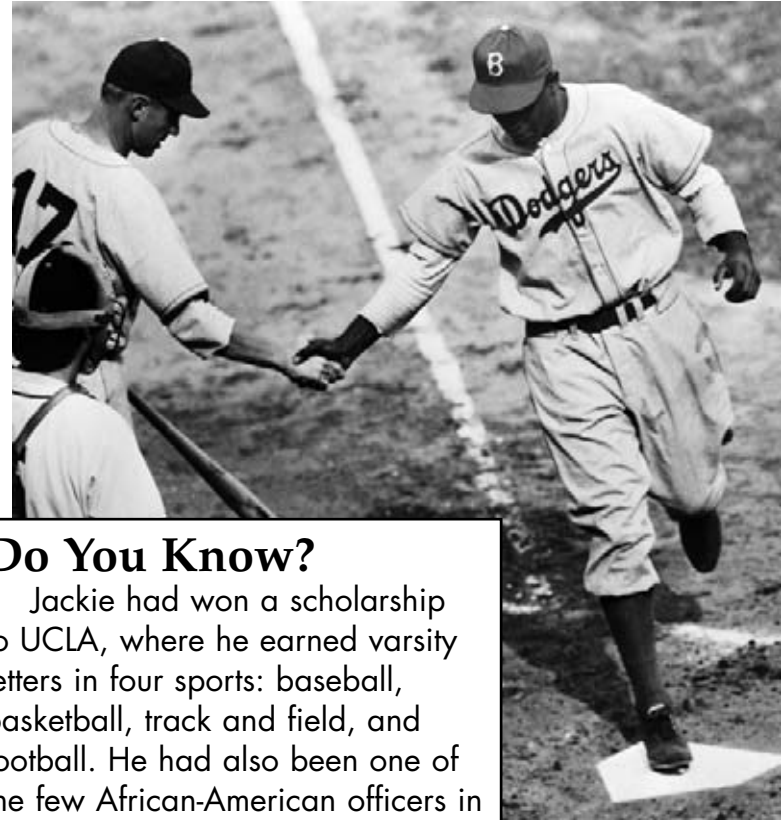
The Washington Senators, a major league baseball team, before black players were integrated.



A 1943 Marine Corps baseball team at Camp Lejeune North Carolina featured black and white players.

During this time, black and other non-white people were **discriminated** against. Only white people were allowed to play in the Major Leagues. Black players formed their own Negro Leagues. Many of its players were just as talented as Major Leaguers.

The owner of the Brooklyn Dodgers, Branch Rickey, knew it was wrong to keep talented players out of the Major Leagues. He wanted to **integrate** baseball, but he knew it would take a very special person to stand up against **racism** and break the color barrier. After years of scouting the Negro Leagues, he discovered Jackie Robinson.



Do You Know?

Jackie had won a scholarship to UCLA, where he earned varsity letters in four sports: baseball, basketball, track and field, and football. He had also been one of the few African-American officers in the Army in World War II. Jackie's intelligence and leadership abilities were a big part of why Branch Rickey knew he could handle breaking baseball's color barrier.

Jackie is congratulated after hitting a homerun.

Jackie Robinson could hit, run, and field as well as anyone. His daring style of running bases excited fans and unnerved opposing players. A fierce competitor, he could beat opponents with a bunt, a blast, and most importantly, his brain.

After a year in the minors, where he led the league in batting and his team to a championship, Jackie, now 28, was promoted to the Dodgers. Just as Branch Rickey warned, Robinson's rookie season was difficult. Opposing players yelled insults at him. Pitchers purposely threw at him. Fans booed. Even some of Jackie's teammates treated him badly.

Jackie took in the **catcalls** with quiet dignity. He never lost his temper and never fought back with his fists. Instead, he let his skills on the diamond speak for him. In his rookie year, he hit .297, led the league in stolen bases, and won the Rookie of the Year Award. In 1949, he won the National League batting title and also the highest honor, the Most Valuable Player Award. By 1950, he was the highest-paid Brooklyn Dodger and the team's leader.

Jackie argues a call with the umpire.



It is the first game of the 1955 World Series, a match between the rival New York Yankees and Brooklyn Dodgers. The Dodgers have been in seven World Series—and lost every one. “Wait ‘til next year!” the fans cry.

Jackie Robinson leads off third base. He's 36 years old now, and at the end of his career. But he is still a dangerous base runner and a joy to watch. He takes an extra step toward home plate, then another. He dives back to third, safe on the pick-off.

Jackie dusts himself off. He stares down the pitcher and resumes his big lead. He darts right, then left, then . . . off he goes! The pitch flies to the plate, but not in time—Jackie is safe at home! The fans go wild!



Jackie's bold steal of home pumps up his teammates, and they go on to win the World Series. In Brooklyn, “next year” has finally arrived.

Jackie steals home.



The Washington Nationals baseball team in 2005 shows how baseball has integrated over the years.

Jackie Robinson showed that black baseball players belonged in the Major Leagues. Soon after his pioneering efforts, other teams began to hire black and Latino players. Today, the national pastime of the United States is enriched with players of all races and nationalities.

Although Jackie Robinson didn't break any baseball records, he will be remembered long after the records are forgotten because he broke baseball's color barrier. His inner strength and **conviction** to equality made it possible for all people, regardless of race, to participate equally in American sports.

The Fastest Man: Jesse Owens (1913–1980)

Sprinting legend Jesse Owens burst onto the sporting scene in junior high school in Cleveland, Ohio. He set world records for his age group in the high jump and long jump.

The high school track coach invited Jesse to join the team. But Jesse was very poor. He had to work after school and couldn't practice. Instead, he got up at 5 a.m. to train with his coach.

Jesse's legend grew. At a national high school track meet, he tied the world record for the 100-yard dash and set a new world record for the long jump, and he was still only a teenager.

Do You Know?

Jesse chose to go to Ohio State University even though it was one of the few colleges that did not offer him a scholarship. He worked as an elevator operator, waiter, and gas station attendant to support himself and his young wife, Ruth.

In 1935, at a college championship meet, Jesse established new world records for the 220-yard dash, long jump, and 220-yard low hurdles. He tied the world record of 9.4 seconds for the 100-yard dash. Never before had a track and field athlete accomplished so much. And he did it in about an hour—with a back injury. Yet, for all the records he set, his greatest triumphs lay ahead.



Jesse Owens races several strides ahead of everyone at the 1936 Olympics. Inset: Hitler.

An Olympian for Eternity

In 1936, Jesse traveled to Berlin, Germany, for the Summer Olympics. But his participation in the Games was controversial. Nazi leader Adolph Hitler ruled Germany. Nazis believed that Aryans—non-Jewish white people—were a “master race” superior to all other peoples. They called black people a “primitive” race.

Jesse was not **intimidated**. He firmly believed that individual excellence, not race, color, or where you were from, distinguished one person from another. And he proved it on the track in Berlin.

It is August 1936, the final day of the Olympics. Jesse Owens has already breezed to the gold medal in the 100-meter and 200-meter races. Chancellor Hitler has left the stadium rather than shake his hand.

Being snubbed does not bother Jesse Owens. He is concentrating on the long jump. Although it is his best event, he almost did not qualify because a German judge claimed he fouled. Now it is the fifth round. Jesse is tied with Luz Long, a German. Both have jumped 22 feet, 10 1/2 inches.

With a few deep breaths and long strides, Jesse sprints down the path. He springs into the air and sails into the landing pit for a record-setting leap of 26 feet, 5 1/2 inches. Another gold medal is his!



Jesse set out to do his best at the 1936 Olympics. He earned four gold medals, a first in Olympic history, and by letting his accomplishments speak for themselves, he discredited an evil dictator.

Jesse returned from Germany to a ticker-tape parade and cheers of admiration. But black athletes at that time were not put in ads, making it difficult for Jesse to earn money from his fame. To earn a living, Jesse participated in promotional stunts. He raced racehorses and motorcycles. At Negro League baseball games, he raced the fastest players, often giving them a 10-yard lead!

He went on to be a playground director for the city of Cleveland and a well-known speaker. He crisscrossed the country and the world inspiring young people to do their best. The government named him America's Ambassador of Sports. Later in life, he was awarded the Presidential Medal of Freedom.

Jesse Owens' grandfather had been a slave. His father was a **sharecropper** who worked on other people's farms. Jesse demonstrated that it is not where you come from that determines what you achieve. That is the legacy of Jesse Owens, a man who was always a step ahead.

Glossary

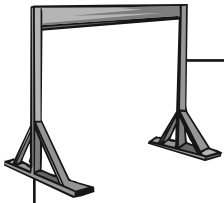
catcalls	yelled insults (p. 17)
conviction	dedication; determination (p. 19)
discriminated	treated badly because of a certain characteristic (p. 15)
exploits	accomplishments (p. 9)
gridiron	the (American) football field (p. 6)
integrate	to bring together (p. 15)
intimidated	afraid (p. 21)
lucrative	earning a lot of money (p. 8)
legacy	something handed down from the past to the present (p. 13)
pentathlon	an athletic competition that involves five different events (p. 5)
racism	the belief that one race is better than another (p. 17)
revolutionized	made enormous changes (p. 4)
sharecropper	farmer who works someone else's land and gives the owner a portion of the crops (p. 23)
unprecedented	never happened before (p. 12)

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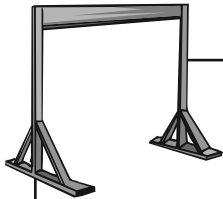
baseball, 4, 8, 14–19	Owens, Jesse, 20–23
basketball, 6, 10, 11	Rickey, Branch, 15, 16
Brooklyn Dodgers, 15–18	Robinson, Jackie, 14–19
Canton Bulldogs, 8	Summer Olympics, 4–7, 11, 21
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football, 8, 9	track and field, 4–7, 11, 13, 20–23
golf, 6, 12, 13	World Series, 18
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Name _____

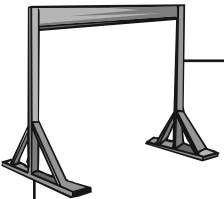
Instructions: In the top box, write what you already know about American sports legends. In the second box, write what you would like to learn about them. After you finish reading, fill in the third box with information you learned from reading the book.



K: Knowledge I know



W: Knowledge I want to know

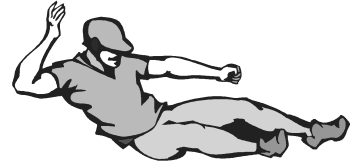


L: Knowledge I learned

Name _____

Instructions: Read the sentences below and decide whether they contain dashes or hyphens. Then write *D* for *dash* or *H* for *hyphen* on each line. If the sentence contains a dash, explain how the dash is used on the line below the sentence.

- _____ 1. Jim Thorpe could just as easily run over tacklers as run past them—he was very fast and strong.



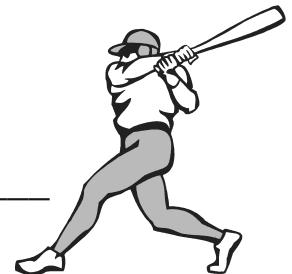
- _____ 2. What's more astonishing is that she single-handedly won the meet, competing against teams with twenty members.

- _____ 3. Babe's greatest accomplishments were still to come in yet another sport—golf.

- _____ 4. The pitch flew to the plate, but not in time—Jackie was safe at home!

- _____ 5. Jesse established new world records for the 220-yard dash, long jump, and 220-yard low hurdles.

- _____ 6. He did it in about an hour—with a back injury.



Name _____

Instructions: Use the dictionary to identify the definition of each word in the homophone pair. Write the definition on the line under the heading *Definition*. Then use the definitions to write one sentence that includes both words in the homophone pair. You may add suffixes such as *-ed*, *-s*, or *-ing* to the homophones to make them work in the sentence.

Word	Definition	Sentence
ad		
add		
base		
bass		
brake		
break		
feat		
feet		

The Legacy of da Vinci

A Reading A-Z Level Y Leveled Reader

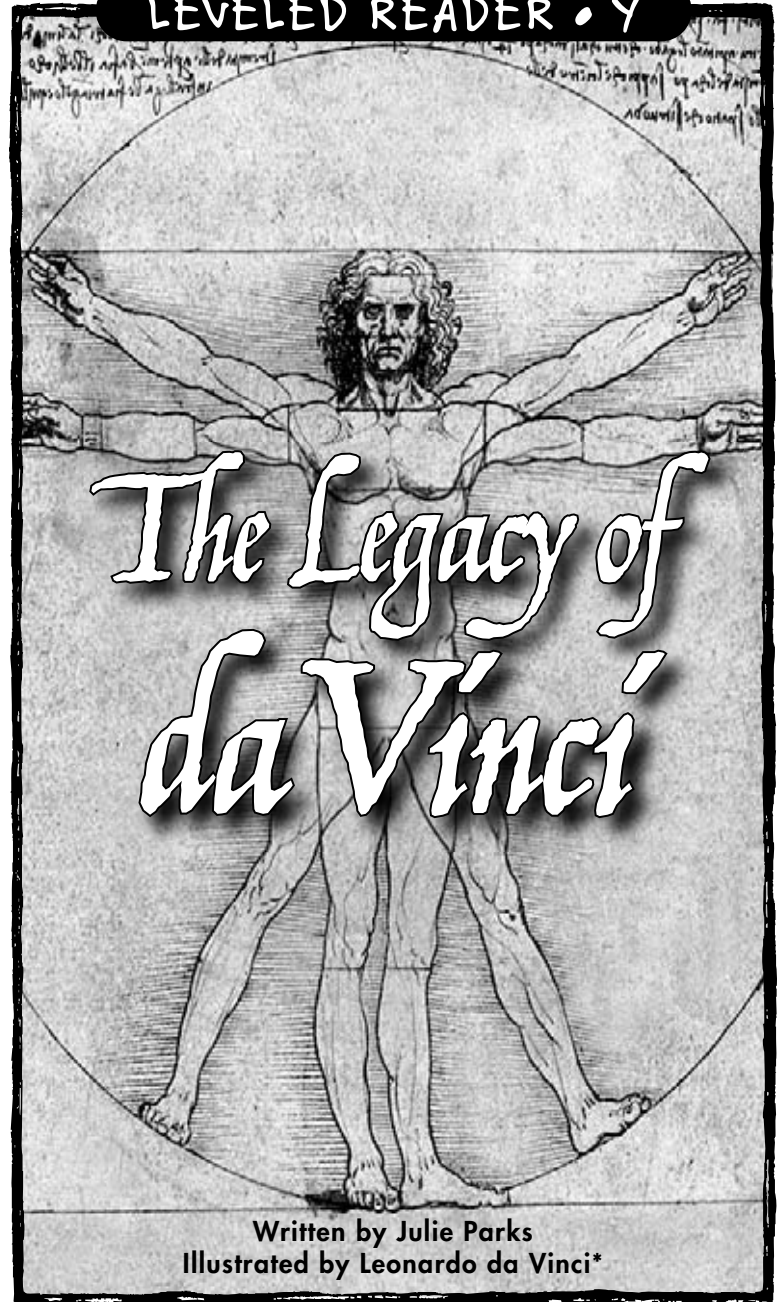
Word Count: 2,195




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The Legacy of da Vinci



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* All illustrations in this book are taken from Leonardo da Vinci's notebooks except for the illustration on page 17 (ProQuest Information and Learning Company).

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Level Y Leveled Reader
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Illustrated by Leonardo da Vinci*

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Correlation

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Reading Recovery	28
DRA	N/A





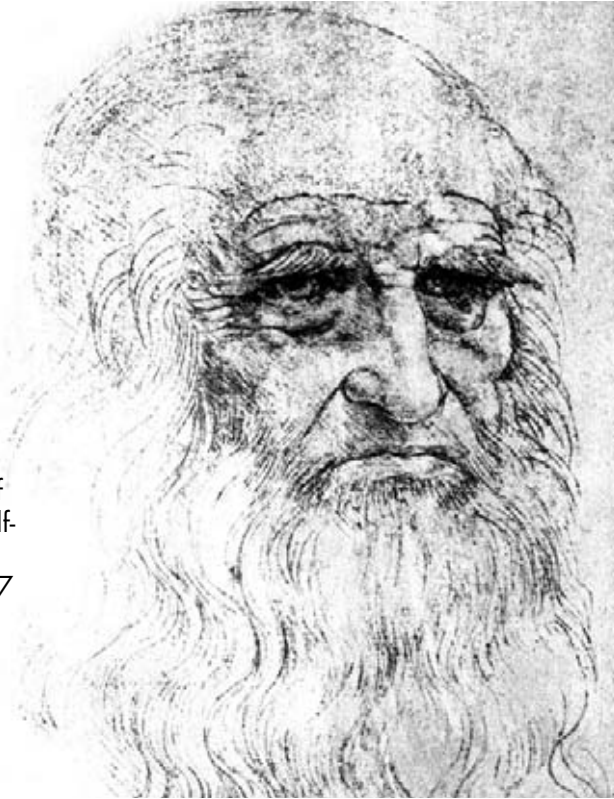
A Class Clown Without a Class

Leonardo, born in 1452 in the small Italian village of Vinci, was a prankster. Leonardo's curiosity would often lead him on adventures, even as a young child. One time, he made bizarre creatures out of soft wax, filled them with air, and released them into a garden full of surprised and frightened people. Another time, Leonardo painted a monster on a wooden shield and put it in a darkened room to scare his father. When his father walked in and light from the window shone only on the monster, he thought the monster was real so he ran away.

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Questioning, Studying, Inventing	14
Knowing How to See	18
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This is one of da Vinci's self-portraits. He lived to be 67 years old.

Leonardo was very different from other children his age. He had charm. He was gentle, handsome, and loved animals. In fact, he loved animals so much that he refused to eat meat. Vegetarians were very rare during that time, and people thought it strange that Leonardo refused to eat meat. Leonardo was different in other ways, too. He understood math concepts well beyond his years. His talents as a musician and as an artist, even as a young child, had adult qualities.



Growing Up

As a child, Leonardo lived with his grandparents and uncle. His father, Ser Piero, was an ambitious businessman and spent most of his time 40 miles away in the city of Florence, Italy. Leonardo's father made rare and short trips to the family's home near Vinci, Italy.

Since his father wasn't around much, Leonardo spent much of his time with his father's brother, Francesco. His uncle allowed him to explore the fields and woods near his farm. Uncle Francesco was patient and always tried to answer Leonardo's questions. He taught him the names and uses of plants and herbs, the signs of approaching weather, and the habits of local wildlife. The village priest taught Leonardo reading, writing, and basic math. All these experiences gave Leonardo a thirst for more knowledge.





The markets on Ponte Vecchio Bridge and a view from the Duomo in Florence

When Leonardo was a teenager, he moved to Florence to be near his father, who was newly married. Florence played a major role in Europe's rebirth, called the **Renaissance**, which took place in the sixteenth century (1485–1603). Artisans, sculptors, poets, and musicians lived and worked throughout the city.

Leonardo wanted to be an artist, so his father agreed to let him work as an **apprentice**, or assistant, to a local artist.



At the workshop of the master artist, Andrea del Verrocchio, Leonardo learned many techniques for painting and sculpting—he even learned to make his own paints using pigments and egg whites. Soon, Leonardo worked his way up to head assistant, and not long after, his painting skills surpassed Andrea's, making Leonardo a well-respected artist.

Leonardo liked painting, and he received many **commissions**, or requests, from the people of Florence who wanted him to paint their portraits.

However, some people complained that Leonardo didn't take the work seriously. They said he couldn't focus on one task long enough to complete the job. Many of the customers became upset waiting for their paintings. Leonardo did not care. He was busy thinking up new projects.



Multitalented

Leonardo wasn't just an artist, he was a talented problem-solver. He learned from his Uncle Francesco that one should ask questions and seek answers; and if a problem should arise, one should look for a solution. Leonardo followed this advice and began solving some of the problems he found while painting.

For example, doing his work by the dim light of his candles and oil lamps proved difficult. So, Leonardo created a new lamp that used water to magnify the flame, making light glow across the entire room. Straining his eyes to paint precise details took a toll on his eyesight. So he improved his eyeglasses to make his vision better.

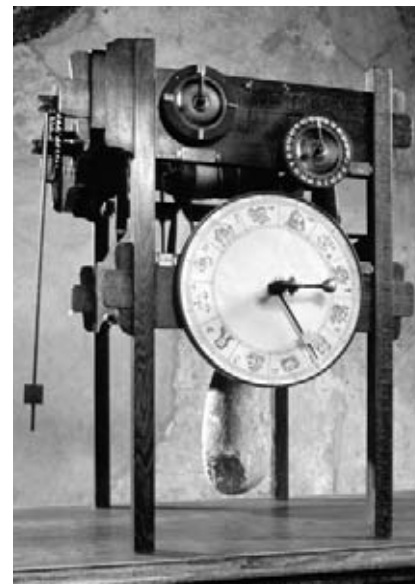


Renaissance oil lamp



Leonardo invented many other things to help him solve some of his problems. He created pliers and a wrench to help tighten and loosen the parts of some of his larger projects—neither of these tools had ever been seen before his time. He designed a new clock that would tell minutes as well as hours to keep him on time. Always a prankster, Leonardo also developed a very funny alarm clock. Here's how it worked:

Someone would tie a rope to a sleeping person's ankles, and then, on the other end, suspend a bucket from the ceiling, which would gradually fill with water overnight. When the bucket was full, the weight of it would pull the person's legs straight up into the air. This certainly



succeeded in waking the person up!

Often the things Leonardo created were written, described, and sketched in notebooks. These notebooks are windows into how Leonardo thought and problem-solved.

A replica of a da Vinci alarm clock





Leonardo was a great problem-solver. What enabled him to be so great was his own curiosity. He never lost his childhood desire to explore, just as he had done in the fields and woods near his uncle's farm. He loved studying things. One time he wanted to know how old a tree was. He studied it and figured out that by counting the rings on a tree's trunk anyone could determine its age. Another time, he wanted to know if he could create solar power, and so, using concave mirrors to reflect the sunlight, he heated water.



Leonardo also had a lifelong curiosity with the concept of flight. One of his favorite subjects to study and sketch in his notebooks was the bird. Leonardo thought that if he could understand how a bird flew, he would be able to use that knowledge to create a machine that would allow a person to fly.

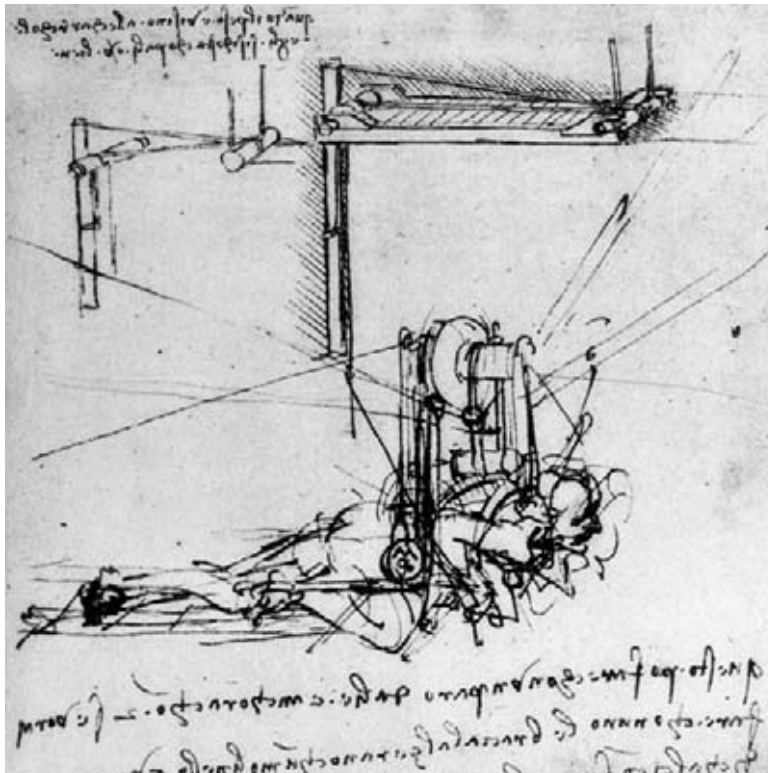
This idea led to sketches and designs for an early helicopter that were based on a child's toy, a bird-like machine that would have been much too heavy to fly. He also sketched a parachute and his most successful flight design, a hang glider, in his books!



Do You Know?

It is thought that Leonardo may have actually tested one of his flying machines on January 2, 1496, four hundred years before the Wright brothers' first flight.





An early sketch of da Vinci's hang glider

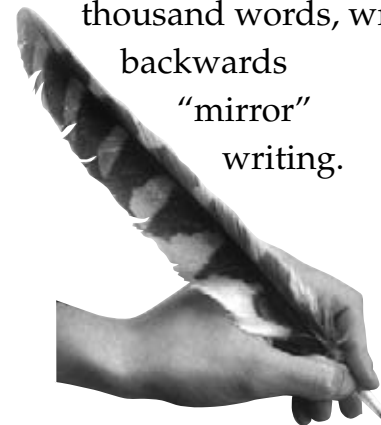
Leonardo didn't build all of his inventions, but he carefully sketched his ideas into his notebooks and wrote very precise details and instructions for each one.

Leonardo believed drawing was the most complete way to understand something. Therefore, he drew the objects he studied from many different angles to show their forms and functions. Many of his sketches were so detailed and beautiful that they are used as examples in books today.



Learning was a never-ending passion for Leonardo. He read and studied every book he could. He borrowed books and spent hours in libraries.

While he read, Leonardo wrote down any words he didn't know, so he could learn them later. One of his notebooks contained over nine thousand words, written in his unique backwards "mirror" writing.



Some experts think that he may have written backward to keep his ink from smearing, because he was left-handed. Since he didn't have a teacher to force him to write with his other hand, the way some left-handed people did, Leonardo simply wrote in the way that was most comfortable for him.



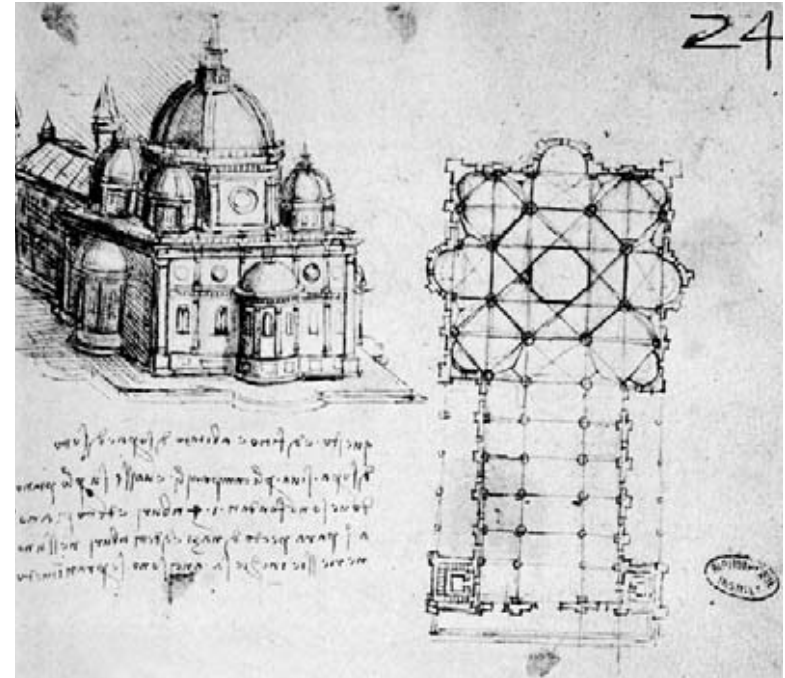


Whenever Leonardo studied something, it inevitably led to more questions and more interests. For example, when he focused on the study of light and how it helps a person see, it led him to study the human eye, and then the human body.

The study of birds led him to the study of flight, mathematics led to mechanics, and his interest in air and water currents led him to study power and energy.

The more he learned, the more he wanted to know. “Why” or “how” were some of his favorite questions to ask when he finished reading because it got him thinking and pursuing new interests.

His notebooks are studied today. Several **prototypes**, or models, have been built in modern times using the notes in his notebooks. Many of the prototypes actually work!



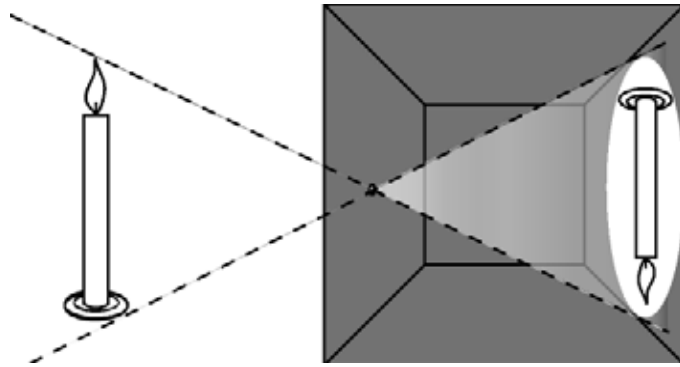
One of da Vinci's cathedral designs

If you were to tour a museum that featured Leonardo's work, you might find a prototype of his clock, a miniature **replica** of his design for a cathedral, a small model of his helicopter, or representations of the many **hydraulic**, or water-powered, machines that he sketched carefully and faithfully into his notebooks. In 1993, and subsequently, groups of scholars have gotten together and tested Leonardo's hang glider designs.

The prototypes have worked beautifully, especially when modern lightweight materials were used.



Many of Leonardo's inventions were unlike anything that people living in the 1400s could even imagine. In modern times, it's commonplace to have doors open for you automatically, but if you lived in the fifteenth century, a door that was suddenly pulled open with ropes and weights, as in one of Leonardo's designs, was a **novelty**. It might have even seemed a little scary.



Leonardo's ability to project images of an object onto a wall by using a box, a small lens, and a candle also amazed people. His **camera obscura** was a creation that allowed images to be captured on paper.

For these types of amazing feats, Leonardo was accused of witchcraft by some of his own students. His ideas were so unfamiliar that his work became controversial. It was probably because of this that the pope in Rome refused to commission work from Leonardo.



Knowing How to See

When Leonardo became a master craftsman, he registered with the **guild** and began training his own apprentices. Leonardo's students often completed his unfinished paintings. This was a good arrangement for Leonardo, who preferred creating and improving gadgets, or studying the things he felt passionate about rather than painting portraits of people all the time.

When he wasn't painting or inventing, Leonardo was observing or watching. He watched birds, water, people, and anything else that interested him. He believed that knowledge

is gained from "knowing how to see." His thoughts and ideas were not always correct, but his extensive observation of how the world worked allowed for creations and discoveries that were astoundingly accurate for his time.



Leonardo also sketched the animals in his imagination.



Although Leonardo kept some ideas to himself, such as his designs for a submarine that he feared might be used to kill innocent people, he did share much of his knowledge with others.

For many years, one of Leonardo's theories, "nothing is moved, unless it is moved upon," was known as Leonardo's law. However, when Sir Isaac Newton worked out a mathematical formula for the principle during the seventeenth



century, the law became known as Newton's first law of motion.

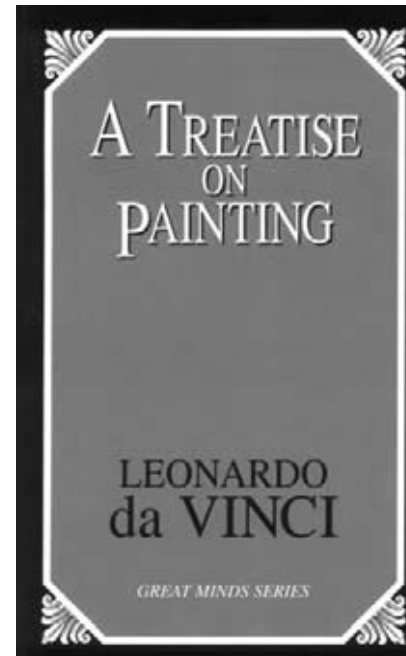
Leonardo intended to publish his writings in the form of an encyclopedia, but he kept himself so busy he never got it published. He died on May 2, 1519 at age 67.



Lost Notebooks

One of his dedicated students, Count Giovanni Francesco Melzi, inherited Leonardo's notebooks and documents along with many of his other belongings. Melzi tried to compile and organize

the thousands of documents into the books his master dreamed of, but he was only able to put together one book. That book, called *A Treatise on Painting*, focused on Leonardo's thoughts and beliefs about art and the artist. The book was published many years after Leonardo died.

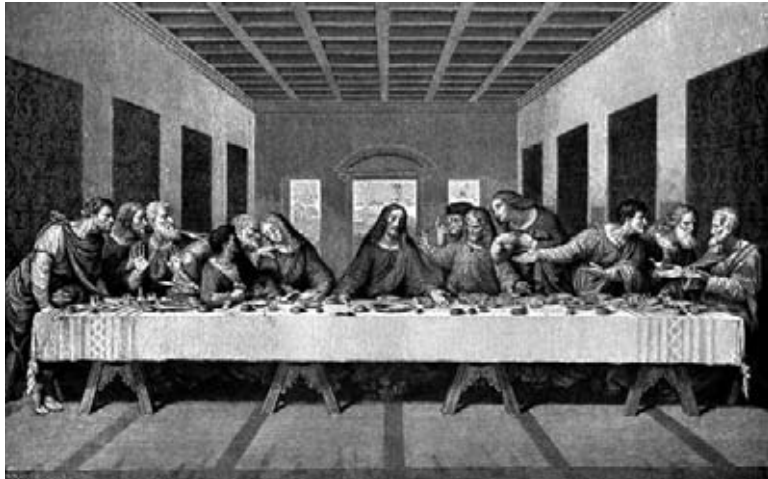


Only a fraction of da Vinci's work appears in this book.

When Francesco Melzi passed away, Leonardo's notebooks

and documents passed on to Melzi's son, who didn't care about them at all. Leonardo's work was stored away in the younger Melzi's attic for years. Eventually, he gave away or sold much of it to various collectors and it was scattered across the world.





For many years, most people knew Leonardo da Vinci only as an artist since he had created such masterpieces as *The Last Supper* and *La Gioconda*, better known to Americans as *The Mona Lisa*. They had no reason to think of him as anything other than a wonderful painter, especially since his only published book was on the subject of art.

It wasn't until the **Industrial Revolution** in the 1880s that Leonardo's documents began to resurface, and people learned of his **innovative** ideas. By then, many of his creations had been reinvented and the credit given to others.



Oscar Wilde



William Butler Yeats



Sigmund Freud



Albert Einstein



Andy Warhol

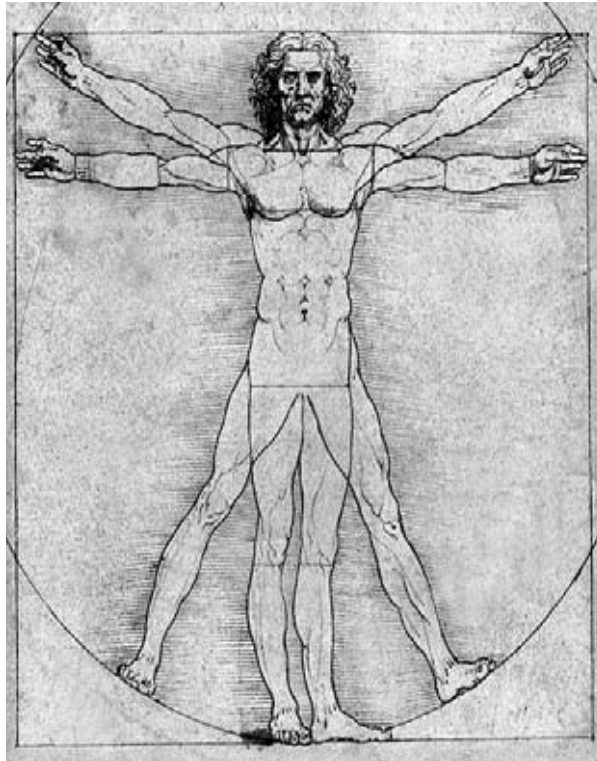


Many areas of study could have been advanced by Leonardo's ideas centuries ago, if only half of his 13,000 pages of research and drawings hadn't been lost.

Leonardo da Vinci's art and notebooks have been studied or written about by such famous people as the playwright Oscar Wilde, the poet William Butler Yeats, the psychologist Sigmund Freud, the scientist Albert Einstein, and the artist Andy Warhol.

One of his biographers wrote that Leonardo has always been "more studied than understood," since he didn't write much in his journals about his personal life and feelings. Leonardo also didn't date most of his works and notebooks, so there is much confusion about when things occurred in his life and why.





Although his biographies contradict one another, the fascination of Leonardo's life and discoveries continues even today. He created over 1,500 detailed drawings of the human body, which was a great achievement. His enormous contribution to scientific studies in the area of **anatomical** illustrations alone is priceless.

He lived his life in pursuit of knowledge and took on the responsibility of solving problems on his own. He certainly modeled his life after one of his quotes, "knowledge of all things is possible."



Glossary

anatomical	the structure of a body (p. 23)
apprentice	a beginner learning a skill or trade from a master (p. 7)
camera obscura	a darkened closed space in which images from the outside are projected through a small lens onto a facing surface (p. 17)
commissions	tasks or projects that someone requested and paid for (p. 8)
guild	an association of people of the same trade; a union (p. 18)
hydraulic	a machine powered by water (p. 16)
Industrial Revolution	a shift in manufacturing from home-based hand production to large-scale factory production (p. 21)
innovative	creating something new and original (p. 21)
novelty	something new and unusual (p. 17)
prototypes	the original forms used as the models for later production (p. 15)
Renaissance	a historical period characterized by the revival of classical art, literature, and architecture (p. 7)
replica	a copy or reproduction of a work of art, often on a smaller scale (p. 16)



Name _____

Instructions: In the first notebook, write what you already know about Leonardo da Vinci and his work. In the second notebook, write what you would like to learn. After you finish reading, fill in the third notebook with information you learned and the fourth notebook with what you still want to know.

L: What I know

W: What I want to know

L: What I learned

S: What I still want to know

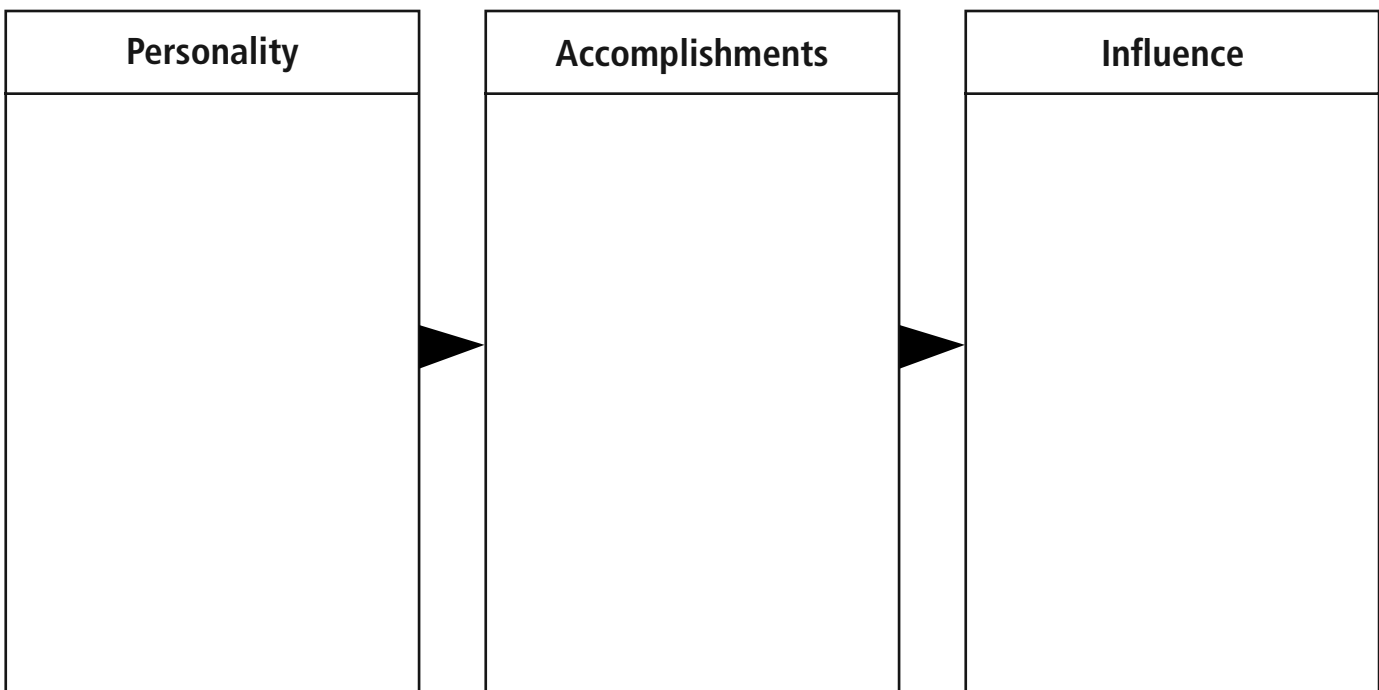
Name _____

Instructions: In the chart below, list information from the book that reflects da Vinci's personality, accomplishments, and influence on others. After reading, use the flow chart to briefly explain how the quote reflects da Vinci's personality, how his personality influenced his accomplishments, and how his accomplishments influence the world.

Personality	Accomplishments	Influence

"Knowledge of all things is possible"

-Leonardo da Vinci



Name _____

Instructions: Complete each sentence with a prepositional phrase. Circle the preposition in each sentence.
One example is done for you.



about	after	around	before	by
during	except	for	from	in
near	of	on	over	since
throughout	until	upon	with	without

1. Leonardo da Vinci studied many things during his life.

2. He created a painting _____

3. He sketched his ideas _____

4. Leonardo solved problems _____

5. Leonardo's uncle taught him _____

6. The notebooks were _____

Name _____

Instructions: Define each base word using a dictionary. Then fill in the blank in each sentence by adding a suffix to the base word. Use the definitions of the base words and context clues to choose the correct word for each blank.

beauty: _____

end: _____

forget: _____

help: _____

skill: _____

worth: _____

-ful



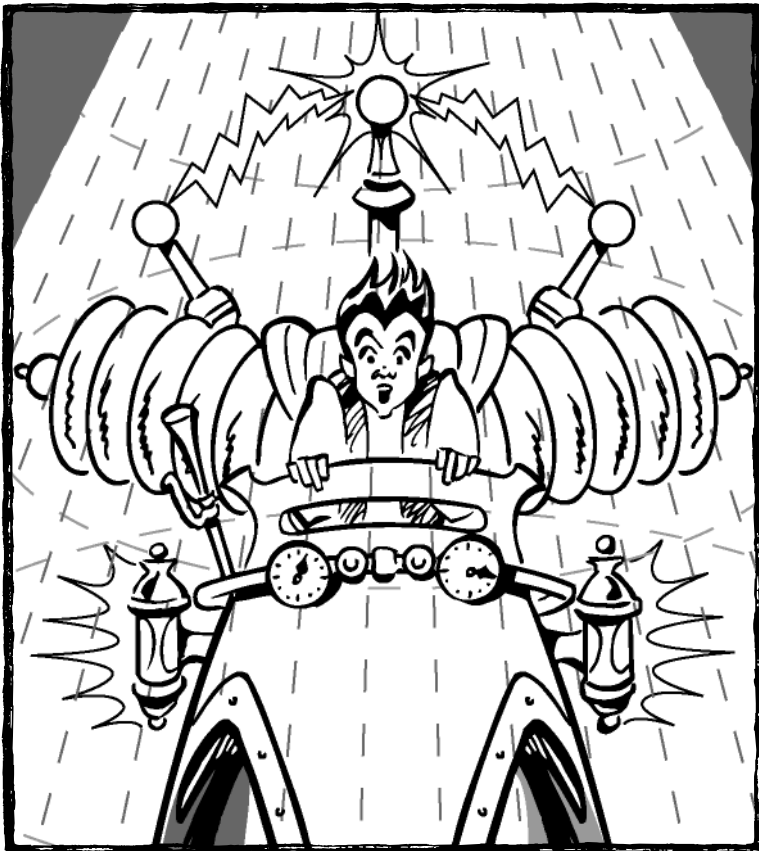
-less

1. Da Vinci was a _____ artist, inventor, and problem-solver.
2. People's fascination with da Vinci seems _____.
3. Customers might have thought da Vinci was _____ because he was too busy thinking up projects to complete jobs.
4. Da Vinci's scientific studies were not a _____ contribution.
5. Leonardo's uncle was a _____ influence on his early education.
6. Leonardo created _____ paintings, such as *The Mona Lisa*.

Fast Forward to the Future

A Reading A-Z Level Y Leveled Reader

Word Count: 2,416



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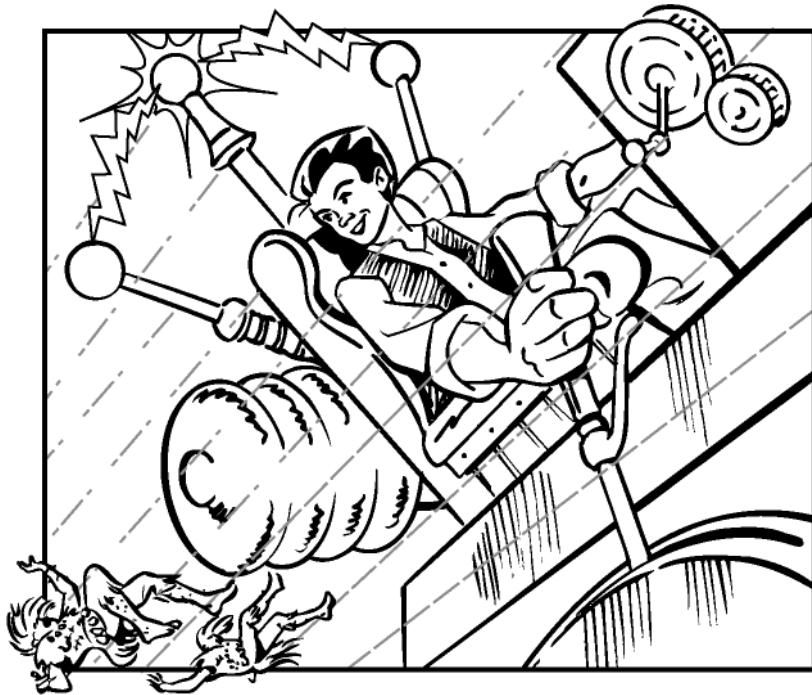
Fast Forward to the Future



A Great Gallardo Book Written by Lori Polydoros
Illustrated by David Cockcroft

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Fast Forward to the Future



A Great Gallardo Book
Written by Lori Polydoros
Illustrated by David Cockcroft

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Note: The Great Gallardo's Books is a continuing series written by Lori Polydoros. Travel with Miguel Ventura as he experiences a classic adventure inspired by H.G. Wells's *The Time Machine*.

Fast Forward to the Future
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DRA	N/A



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All Play and No Work

"Score!" Miguel Ventura's fingers flew over his video controller. He zapped swarms of alien crab monsters that cruised the beach on his TV. "I just beat the game!"

"Ya-hoo!" his friend Trevon yelled. They slapped a high-five.

"Time to get to work," said Miguel's sister, Teresa, as she checked her list. "Dishes first, then laundry, vacuuming, and dusting."

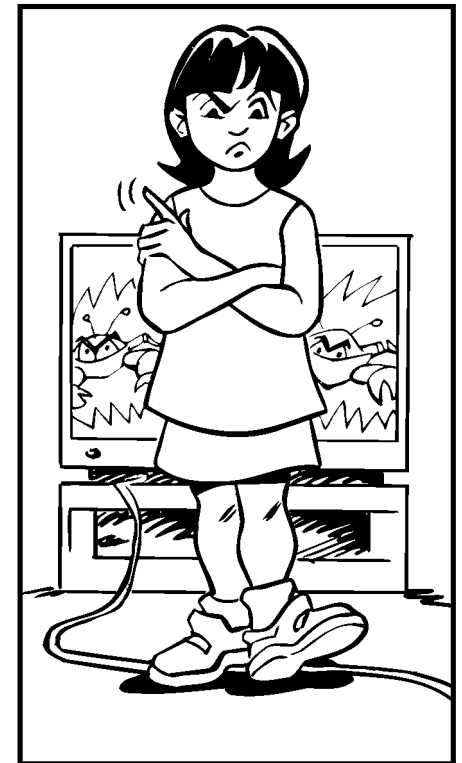
"Sorry, sis."

The boys laughed.

"We only finished the *first* game."

"Nine more to go!" Trevon added.

Teresa planted herself in front of the TV screen. "Mom and Dad said we could only stay home if we did our chores."



The Ventura family owned a sandwich shop, which is where Miguel and Teresa often spent their afternoons and weekends helping out.

"You've got a handle on it, Tee." Miguel slid her aside.

"Fine!" Teresa tossed her list at Miguel. "You'll get grounded, not me."

Trevon shoved chips into his mouth. Crumbs cascaded down his chin like a waterfall.

Miguel flopped onto the cushions of the couch. "This is the life!"

Vrrroooooom! Teresa revved the vacuum in front of the TV.

"Move!" Miguel yelled.

Teresa shrugged.

He flipped off the switch.

"You two are slugs!" She yanked the cord. "Wasting your life away."

"If this is the life of a slug . . ." Trevon said.

". . . we'll take it." Miguel answered. "We've got all the time in the world."

Five minutes later, the phone rang. "It's for you, Trevon!" Teresa called out.

"Hello?" Trevon mumbled into the phone. "Why?" He shrugged. "Fine. Be home in a minute."

"What's up?" Miguel asked.

"Mom says I have to go," he said.

"What did you do, Tee?" Miguel rushed through the house. "You called Trevon's mom to get him to leave, didn't you?"

Silence.

"I'll show her," Miguel muttered under his breath as he slipped out the door, heading directly for the sandwich shop. "Even without Trevon, there'll be no chores for me."

Miguel had found the Great Gallardo's books last year in an old chest up in the loft of his parents' shop. The books belonged to his great-grandpa, a magician called the Great Gallardo. Somehow, Miguel was able to travel into the stories and become a character. Getting lost in the center of the Earth was the scariest thing he had done. Becoming the Scarecrow from *The Wizard of Oz* had been the most fun.

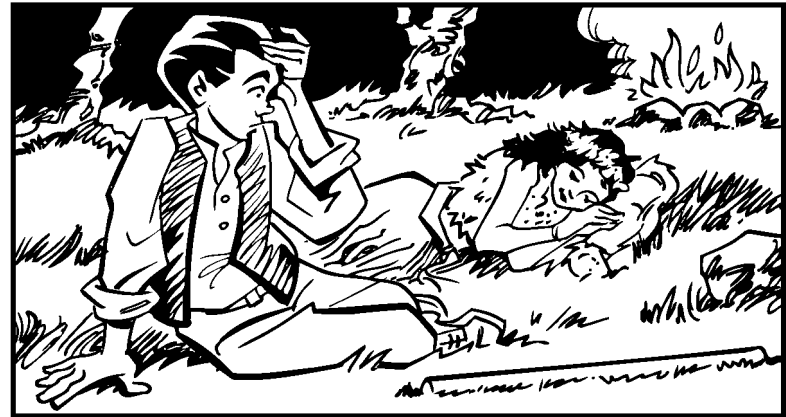
Dust covered the chest of books. An old wrench stuck out from the lid. Miguel slipped it into his pocket, knowing that he'd need it on his journey. Even after so many trips, he didn't have a clue how the magic worked. Miguel pulled out a small blue book. *"The Time Machine by H.G. Wells,"* he said. "Cool, I get to go to the future!"



He started reading from page 326. "I heard nothing but the cracking of twigs under my feet, my own breathing, and the throb of my blood vessels in my ears." The words danced across the page and Miguel's heart quickened its beat. *"then some underworld Morlocks voices there caught I had heard and several they sounds in I closing and me the on the in and were . . ."*

Miguel's view blurred. His head whirled. Light coming through the window zipped in and out. Miguel spun faster and faster. Light and dark **transformed** into gray.

Was this time traveling? Miguel's body grew heavy and suddenly flung forward, slamming to the ground. Then all went dark.



Humanity Lost

Miguel found himself lying in a forest clearing at the base of a hill. A small girl lay curled up behind him. Curly hair adorned with flowers framed her face, which had delicate features. *Who was she?*

A fire hissed from across the clearing. Flickering beams of light from the fire danced across the girl's dress. Flames sprang up from a pile of wood to catch nearby trees and bushes on fire and traveled through the forest like a pack of lions. Miguel panicked. As he jumped to his feet, he kicked an iron bar on the ground. Voices mumbled in the darkness beyond the firelight. Bushes rustled. Footsteps padded the ground. Miguel turned round and round. Someone was coming. *Something* was coming.

The flames exposed several white creatures with gorilla-like faces rushing toward him. Standing upright, they were about the same size as Miguel. Suddenly he remembered the story. These things were called Morlocks, ape-like beasts that lived underground . . . and they were **cannibals!**

Miguel gulped. The Morlocks nearly surrounded him.

“Wake up, little girl.” He shook her, keeping one eye on the Morlocks.

Her big blue eyes opened. “I’m Weena.”

“That means I’m the time traveler!” He picked her up. “And we’re dinner for those Morlocks!”



Weena jumped out of his arms and sprinted into the forest, which grew brighter and hotter from the **inferno**. Miguel reached out, but she slipped away. For a moment, Weena stopped in front of the blaze, **mesmerized** by the dancing flames. Then she moved forward.



“No, fire!” He motioned toward the heat. “Ouch!”

Weena had no clue what he was saying. From the story, Miguel knew that 80,000 years into the future, human beings had changed, and split into two groups. Weena was an Eloi, the people who lived aboveground. Over time, their easy life had made them weaker and less intelligent than the Morlocks, who were the **primitive** worker-class who lived underground and built machinery. The Morlocks only came aboveground at night to hunt the Eloi.

Miguel shivered. Smoke burned his nostrils. Weena stumbled back to where they started and collapsed. He tried to wake her, but he could barely tell whether she was breathing. From behind, Miguel felt fingers cling to his back. They gripped his neck. Arms. He swiveled around, bent down, and grabbed the iron bar off the ground.

"I'm not your dinner!" He lunged toward the Morlocks, waving the bar in the air. "Get away from us!" The Morlocks scattered.

He turned back. Weena had disappeared! His heart fell; he hadn't protected her.

Another Morlock tugged at his ankle.

Miguel kicked his foot out and scrambled up the hill.



A Beautiful Machine

From the hilltop, the glow of the fire illuminated the entire forest. Ashes and embers glittered the ground, burning Miguel's feet. He wrapped huge green leaves around them.

A group of trees exploded like dynamite, sending Miguel to the ground. The ape-like creatures froze near the edge of the blaze. The fire singed their white hair, creating a **putrid** stench. They fell like dominoes, succumbing to the hungry beast of a fire. They, like Weena, had never seen a blaze like this. The future was nothing as Miguel imagined.

The surviving Morlocks streamed through the trees, the fire chasing them like a monster. Miguel followed them. Maybe they would lead him back to the **time machine**, and he could get home.

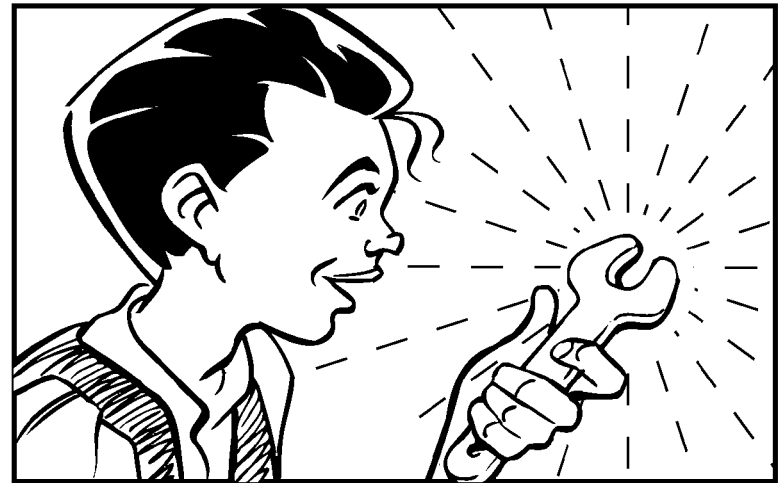
Miguel hustled past trees as tall as buildings and brushed against blue flowers as big as his face. There was no technology in the future, and Miguel surmised that was the reason why nature **flourished**. The Morlocks disappeared into an underground passageway, leaving Miguel alone near a marble statue of a sphinx.



The shiny valves around the sphinx's bronze base shimmered in the firelight. In the story, the Morlocks unscrewed the valves to open this statue so they could capture the time traveler inside it. Miguel was too close behind them for the Morlocks to set the trap this time. Miguel had figured it out—the time machine was inside!

Miguel pulled on the valves. Twisted. Tugged. They slipped through his fingers. Dread spread over him like a storm cloud. How would he get to the machine?

Miguel thought of Weena. Then he thought of Teresa and how he'd been mad at her when he left. *What if he never made it back?* Miguel leaned against the statue. Something from his pocket clanked against the bronze. *The wrench from the loft!*



He ripped the tool from his pocket and fit it onto the valves. *Perfect!* He **torqued** them hard. The front panel of the statue came loose, slid down into the ground, and revealed the time machine!

Miguel rushed over. It was beautiful; a cross between a race car and the gears of a fancy watch. The rectangular metal frame supported twisted crystal and ivory bars that interconnected, creating one, continuous pattern. It was like the ultimate brain puzzle, the kind you could work on for hours yet never solve.

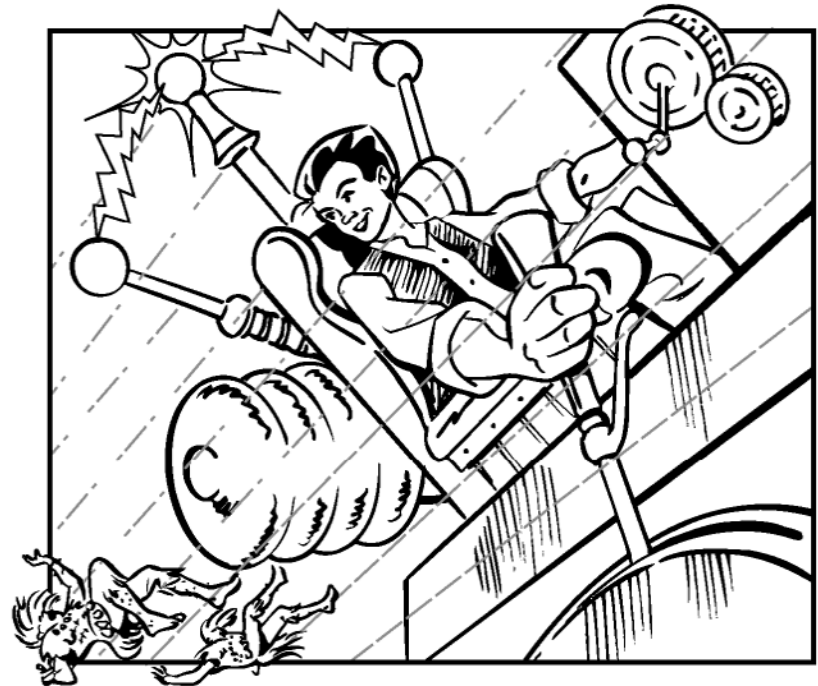
But to Miguel, the idea of time travel was the biggest puzzle. He knew it was impossible in the real world, but he fantasized about moving through space and time: the **fourth dimension**.

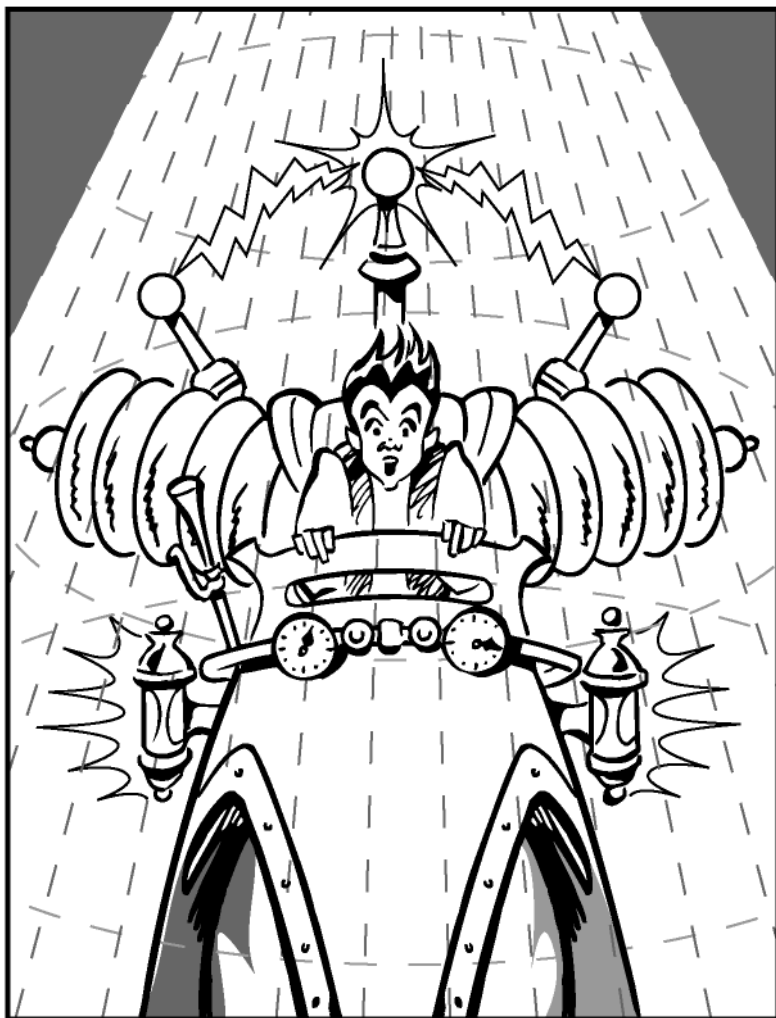
The front panel inside held two levers and three dials labeled with the numbers up to a million. The levers would take him forward and back. The dials would show how many days he'd traveled. How would he know which one to push?

The bronze panel of the statue shot up and clanked shut. He was trapped in the dark! His hands fumbled for the levers. He heard murmurs. Footsteps. Laughter. Miguel was not alone. Warm bodies pressed near him. They pulled on his clothes. Tugged at his feet. Grabbed his shoulders.

He backed against the panel, kicking, screaming, and flailing his arms, surrounded by the Morlocks' musty smell, their steaming breath, their fury. Miguel fumbled in his pockets. He pulled out the wrench and waved it. One of the Morlocks knocked it away.

He felt the prick of teeth against his neck. Miguel lunged forward, knocking his head into the closest Morlock for the ultimate head-butt! In that same instant, he reached out for the levers. The Morlocks tumbled out of the machine as Miguel's fingers clamped down onto metal. He pulled hard.





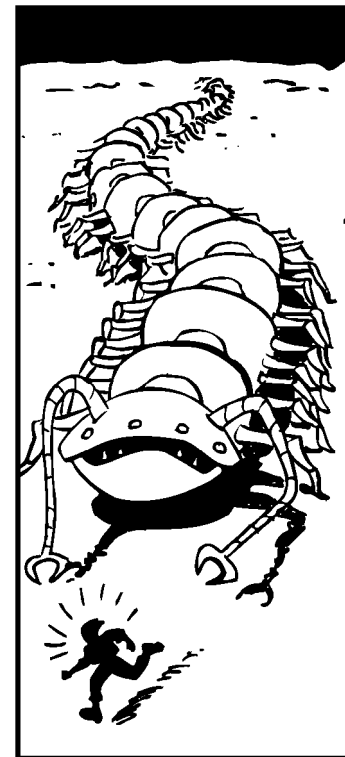
Blackness disappeared. Gray haze. Whirling thoughts. The dials spun wildly, like the second hand on a clock. All at once, Miguel's body surged forward. Everything stopped.

He'd gone forward. Fast forward.

Dying to See the Future

Miguel found himself thrust upon a black, endless plateau scattered with black bushes. The land was flat with no mountains, hills, rivers, or oceans. The sun hung in the gray sky. The fiery star was now orange, and its rays pulsed as if it were losing power.

From across the plain, a long creature crawled toward Miguel on thousands of feet. It rose thirty feet high and had overlapping greenish-black plates covering its body. Multiple black eyes stared him down. As it got closer, two horn-like antennas stretched out like hands. It was a giant centipede, and it was coming after him!

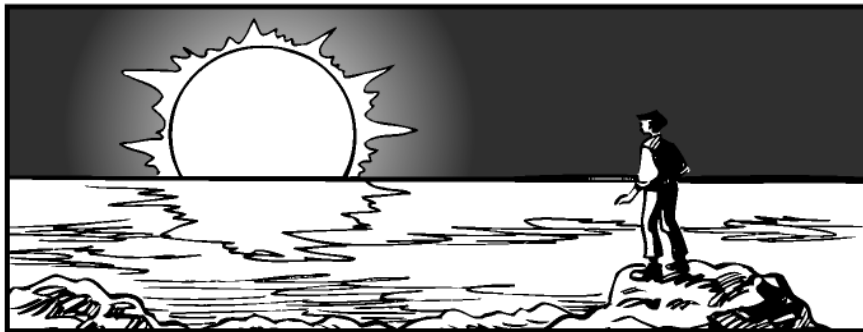


Miguel scrambled back into the machine. He tugged on a lever. Instantly, the sky grew darker. He whirled forward, but the alternating of day and night—sunrise and sunset—slowed. The dials spun forward again and again. The time machine stopped abruptly.

The sun, now red and large, hung along the horizon. The sky was an inky black, missing its moon, and highlighted by only a few pale stars. Like the scarlet of the sun, reddish rocks lined the beach where Miguel stood. Strange **fluorescent** green plants seemed to be the only thing growing.

The ocean was still—no waves, no breakers, no wind. Miguel sat down. It was hard to breathe. He remembered the same feeling when he'd hiked up Mount Whitney, the tallest mountain in California, with his mom. Oxygen was scarce.

The bitter cold nipped at his fingers as he cruised over the rocky beach. The red ball in the sky was a sad picture of what the sun used to be. Was he witnessing the death of the sun and the end of life on Earth? He swallowed. Such a huge question was hard to **comprehend**. A gust of fear and sadness brushed across him. He had to get home. But how?



From the craggy shore, Miguel stepped down onto a boulder. It moved under his feet!

He jumped back when a huge claw reared up from the ground. It was a crab-like creature as big as a table! Its huge antennas swung like whips right at Miguel.

As he scrambled backward, Miguel tripped, slamming into the rocky shore.

The crab moved forward, its huge claws grasping, its eyes gleaming toward its next meal.

Miguel ran. As he turned back, the crab opened its mouth and lunged toward Miguel. Antennas swept over the back of Miguel's neck. His foot caught between two rocks. He tugged. Jerked. Kicked. He was stuck!

The crab came closer.

Miguel squirmed.

Closer.

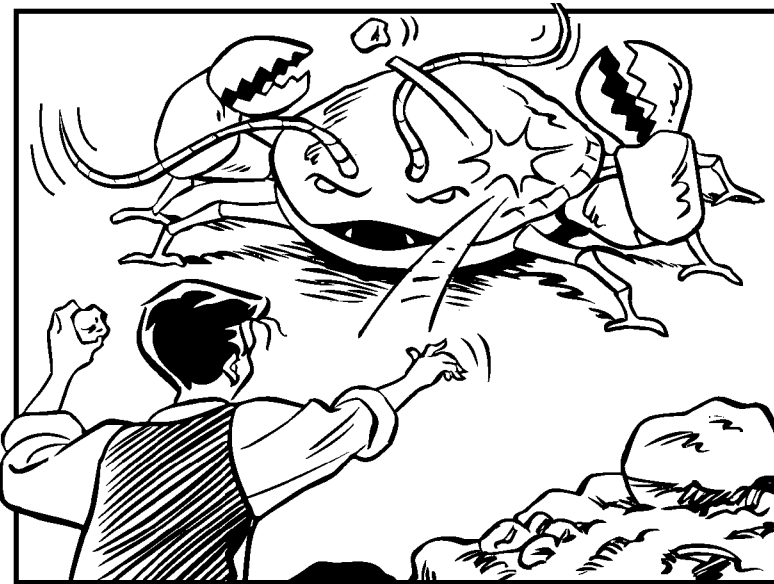
Miguel yelled.

Closer.



Miguel grabbed small rocks off the ground and began to throw. He picked up one after another, left hand, right hand, tossing them as quick as he could. The creature flinched. Miguel bounced more rocks against its hard shell. The crab slowed.

It was working!



Left. Right. Left. Right. He pictured himself in front of his TV, blasting the alien crabs from his video game. But this time, it was all too real! With one last heave, Miguel sent a basketball-sized rock sailing right into the crab's mouth. Its huge claws crossed in front. Its antennas swayed.

Miguel froze.

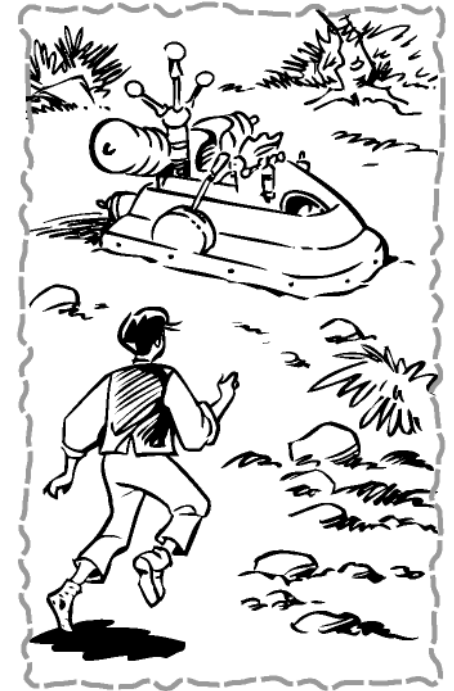
And then the crab turned and crawled away.

"Ya-hoo!" He wished Trevon could have seen this victory.

Miguel reached down and untied the shoe stuck between the rocks. His foot slipped out, and he headed for the time machine. The time machine had to be the key to getting home. Miguel remembered that the time traveler had ended up back in his **laboratory** when he went backward in time. Maybe Miguel would end up back at home if he tried to go backward in time instead of forward.

He sat in the saddle seat, pulled the other lever, and closed his eyes. He twirled. He spun. He could feel the air being sucked out of his lungs. Then suddenly, he was in the loft!

Miguel left the shop and ran home. He found Teresa dusting the living room.



"Nice of you to show up," she said.

Miguel walked over to her, grabbed the rag, and began to clean the bookshelf.

"Who are you?" she asked. "Not my brother—he doesn't work."

"Great-Grandpa Gallardo helped me out." Miguel thought of his fast-forward trip to the future, and sadness filled his heart. "Time is short. You never know how bright or dark the future will be." He dusted the books. "And hard work keeps you strong and smart." He smiled at Teresa.

"You're off the hook this time," she smiled back. "But only if I get to zap alien crabs while you work!"

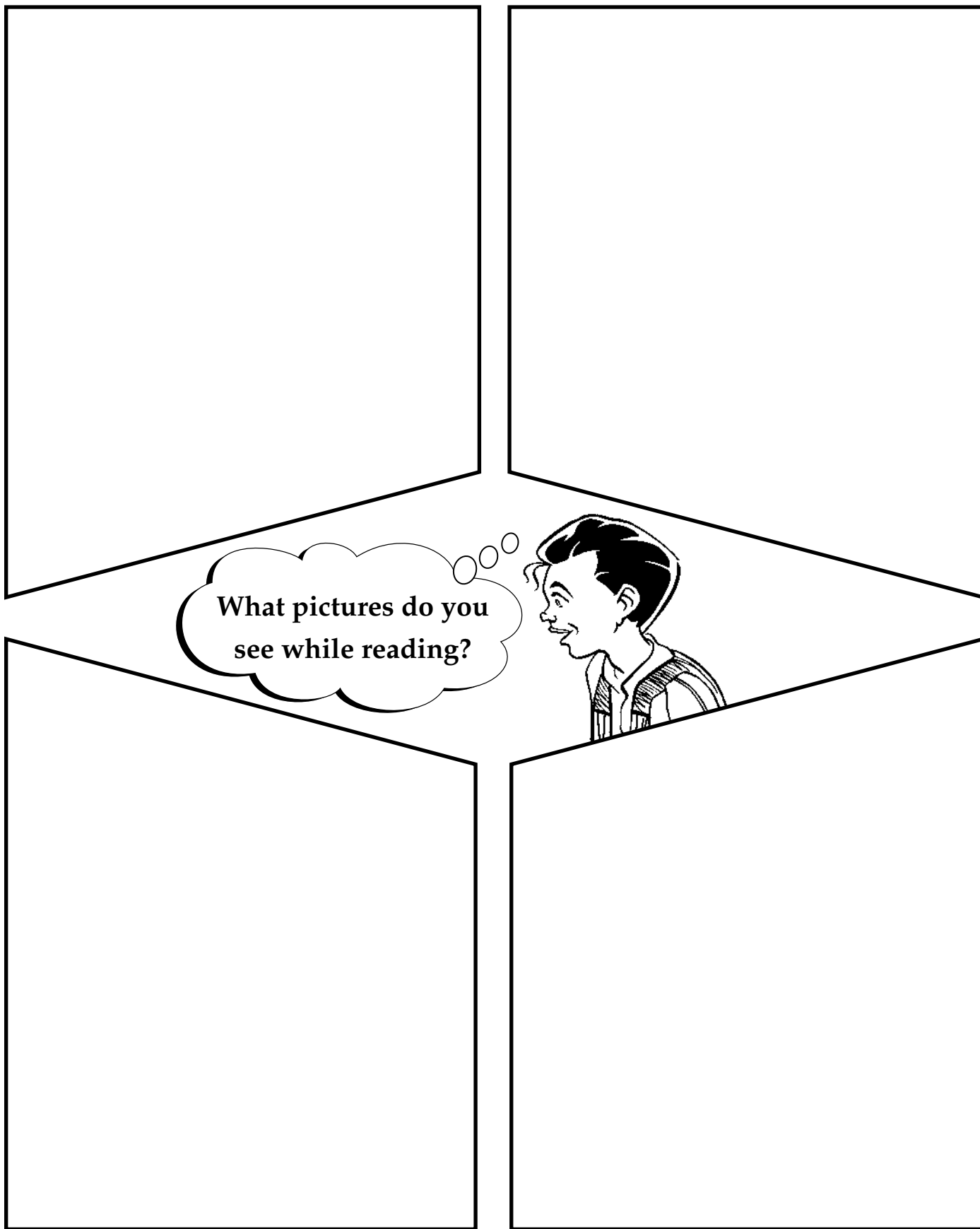


Glossary

cannibals	animals that eat other animals of the same species (p. 9)
comprehend	to understand the meaning of something (p. 19)
flourished	to have grown well because conditions are right (p.)
fluorescent	very bright in color (p. 19)
fourth dimension	the quality of time and duration added to the spatial dimensions of height, width, and depth (p. 15)
inferno	a fire that is burning fiercely or with great intensity (p. 10)
laboratory	a room with equipment for doing scientific work (p. 22)
mesmerized	to have fascinated or have the complete attention of someone (p. 10)
primitive	appearing to be in an earlier stage of development (p. 10)
putrid	foul smelling (p. 12)
time machine	a machine used to travel through time (p. 12)
torqued	to have turned using a rotating or twisting motion (p. 15)
transformed	to have changed in form or appearance (p. 7)

Name _____

Instructions: Visualize information from each section of the text. Then draw what you pictured in the boxes.



What pictures do you see while reading?

Name _____

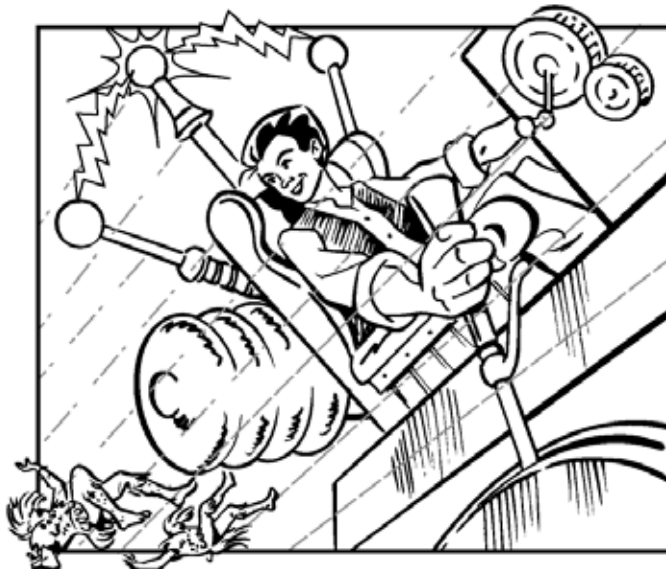
Instructions: Write a problem faced by a character in the story under the *Problem* heading. Brainstorm and write possible solutions to the problem and consequences of each solution. Then write an evaluation of the solution the character actually chooses.

Problem	Possible Solutions (circle the best choice)	Consequences	Evaluation
		Positive: Negative:	
		Positive: Negative:	
		Positive: Negative:	
		Positive: Negative:	

Name _____

Instructions: Circle the compound adjectives in the sentences below. Then underline the noun or nouns that each adjective describes.

1. The flames exposed several white creatures with gorilla-like faces rushing toward him.
2. The Morlocks were the primitive worker-class who lived underground and built machinery.
3. The ape-like creatures froze near the edge of the blaze.
4. It rose thirty feet high and had overlapping greenish-black plates covering its body.
5. As it got closer, two horn-like antennas stretched out like hands.
6. It was a crab-like creature as big as a table!
7. Miguel sent a basketball-sized rock sailing right into the crab's mouth.
8. Miguel thought of his fast-forward trip to the future, and sadness filled his heart.



Name _____

Instructions: Read the sentences below and decide which contain a simile. (Remember to look for the key word *like* or *as*.) Below each sentence containing a simile, write the two things being compared. If the sentence does not contain a simile, leave the line blank. Then write two similes of your own on the lines provided.

1. "You two are slugs!" she said.

2. "That means I'm the time traveler!" He picked her up.

3. A group of trees exploded like dynamite, sending Miguel to the ground.

4. They fell like dominoes, succumbing to the hungry beast of a fire.

5. The surviving Morlocks streamed through the trees, the fire chasing them like a monster.

6. Miguel hustled past trees as tall as buildings.

7. Miguel brushed against blue flowers as big as his face.

8. The shiny valves around the sphinx's bronze base shimmered in the firelight.

My own similes:

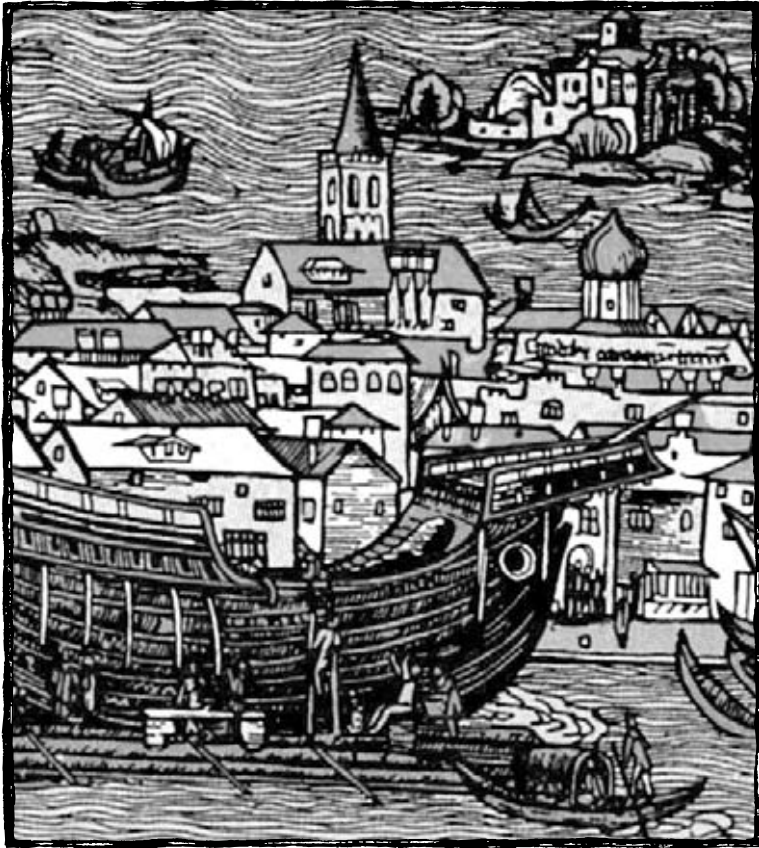
9. _____

10. _____

Marco Polo and the Silk Road

A Reading A-Z Level Y Leveled Reader

Word Count: 2,061

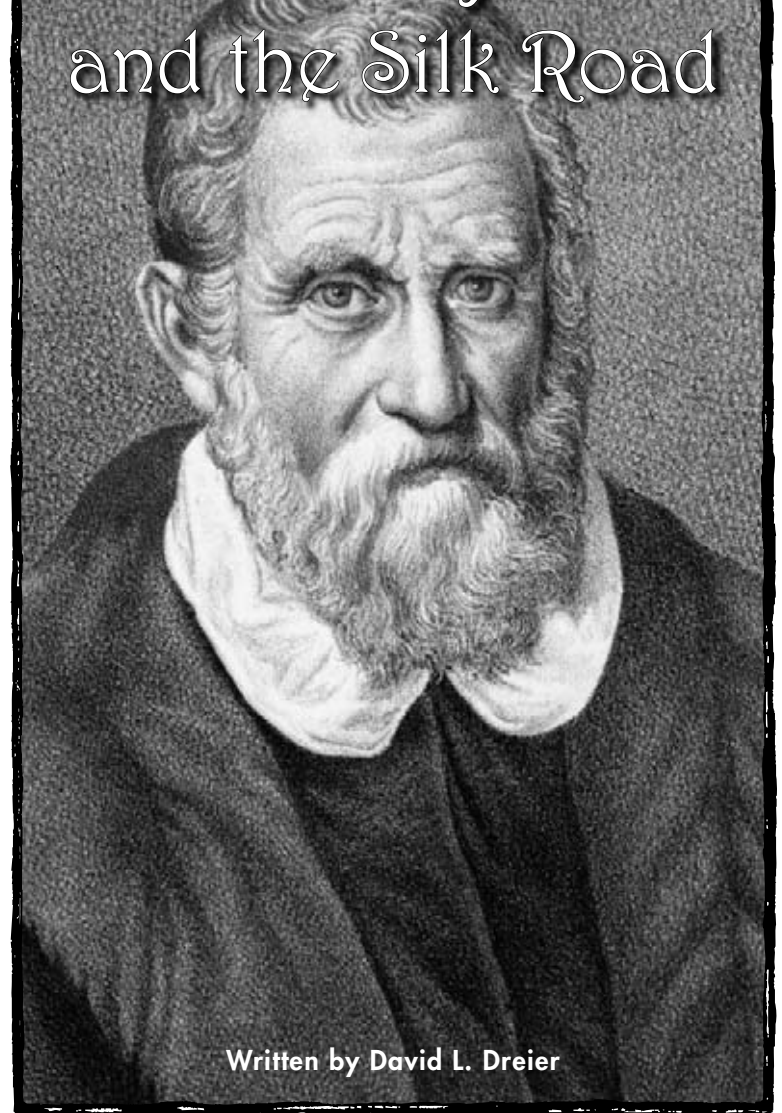



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Pages 10, 16: Illustrations by Stephen Marchesi
Page 18: Illustration by Cende Hill

Cover: Engraving of Marco Polo

Back cover: Ships dock in Venice, Italy.

Title page: This portrait of Marco Polo is based on a mosaic created in the 1860s, more than 500 years after Marco's death.

Table of Contents: The "Meaning of Spring" ceremony

Marco Polo and the Silk Road
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A Tale Told in Prison

In the year 1298, a man named Marco Polo sat in a prison cell in Genoa, Italy. He thought about the remarkable life he had led. During his youth, Marco had traveled from his native Italy to distant lands. For more than 20 years, he had experienced many great adventures. But after his return, he was a hostage in a war between two Italian cities—Genoa, and his home city, Venice (VEN-is).

A fellow prisoner, a writer named Rustichello (rus-ti-KAY-loh), formed a friendship with Marco. "I've heard that you have been to Cathay and have seen many amazing things," he said. Cathay (ka-THAY) was what people in Italy and other parts of Europe called China. China was a **mysterious** land most people knew very little about.

"Yes," said Marco, "I have been to Cathay. Would you like to hear about it?"

Rustichello nodded. "I would indeed."

Marco then sat back and started to tell Rustichello about his fantastic journey. For months, he told one story after another while the writer took pen in hand to write down every word. "This will make a wonderful book," he said.



Engraving of Marco Polo

Mysterious Cathay and the Silk Road

Marco Polo was not the first person from Europe to see Cathay. There had been a few before him. However, those travelers did not publish popular books about their **journeys**. Thus, most people knew very little about the Asian country. Yet traders from distant lands had been bringing Chinese goods to Europe and other parts of the world for hundreds of years.

People in Europe had long desired things from China, such as beautiful pottery, carved jade, and silk. Silk is a beautiful, shimmering cloth made from the cocoons of silkworms. Until the AD 500s, no one outside of China knew how to make silk. The **ancient** Romans (around AD 100) prized silk so highly that they were willing to pay for it with an equal weight of gold.

Much of the trade with China was conducted by way of a long east-west route across the continent of Asia. This route—actually several interconnecting routes—stretched about 4,000 miles (6,400 kilometers). It passed through deserts and across mountain ranges. For centuries, it was a highway for **camel caravans**—long lines of camels loaded with goods.

The caravans carried many valuable things. From Europe and other countries in the West, they transported gold, ivory, wool rugs, precious stones, and other wares to China. In return, they carried Chinese goods to people in Europe and other parts of the West. Although silk was just one of many items brought back from China, it was probably the most desired. For that reason, the caravan route became known as the Silk Road.



modern silk pillow

The Mongols Conquer China

The Silk Road was established in about 200 BC. At that time, China was being governed by a **dynasty**—a line of rulers from the same family or group—called the Han (HAHN). During later centuries, use of the Silk Road varied. Sometimes the journey became dangerous because of warring groups and bandits along the road. When dangers arose, few caravans dared to venture along the route.

In AD 907, the road went into a serious decline, and in the early 1200s dangers on the road multiplied. That is when a people called the Mongols spread out from their homeland of Mongolia on the Asian **steppe** (grasslands). The Mongols launched **conquests** throughout Asia. They were ferocious warriors who showed their enemies little mercy. Mongol armies sometimes destroyed entire cities and slaughtered everyone in them.



"Two Warriors Fighting" shows a battle scene in Asia

The Mongols were led by a man named Timujin. In 1206, his people proclaimed him Genghis Khan (JENG-gihs KAHN), a name that meant "Universal Ruler." This is the name by which he has come to be remembered. Genghis Khan and later Mongol rulers conquered a huge area, which became known as the Mongol **Empire**.



Genghis Khan

Genghis Khan wanted to add China to his empire, but he died in 1227 before he was able

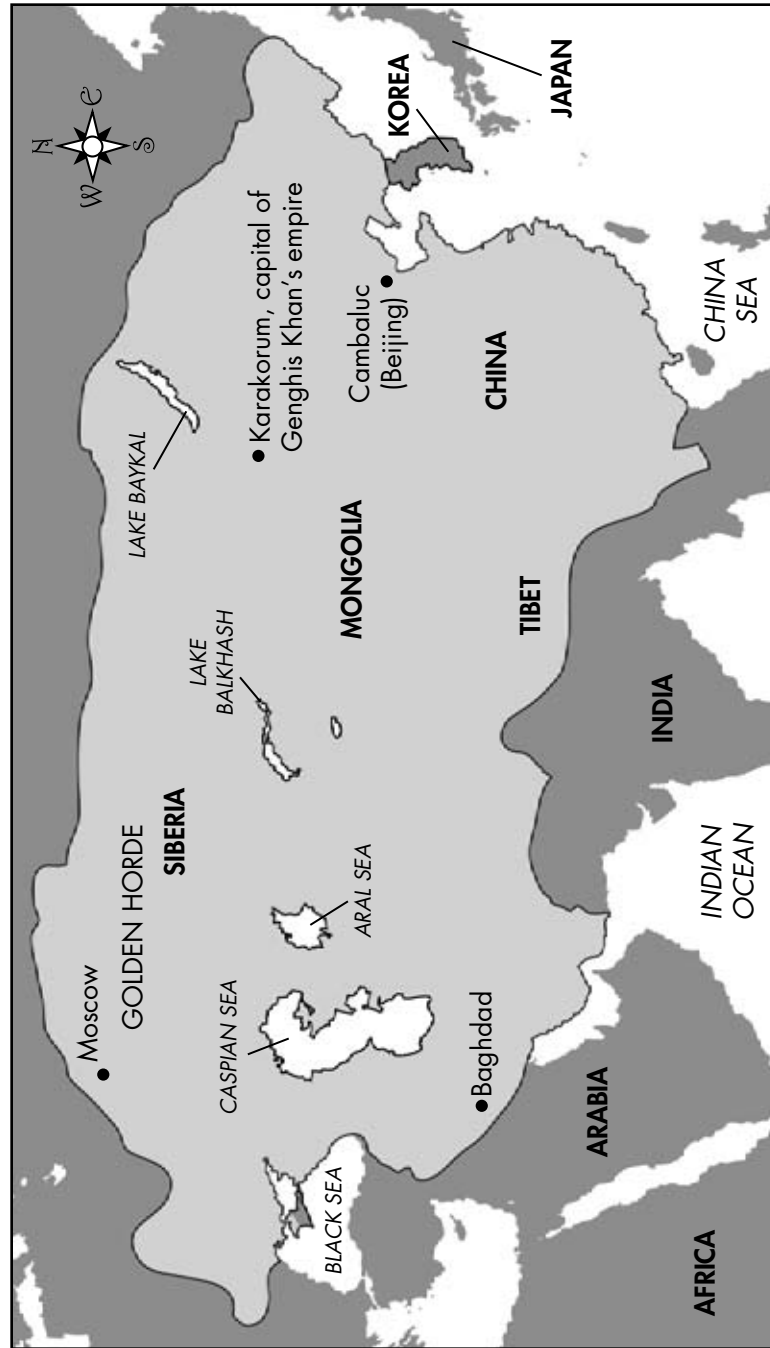


Kublai Khan

to do so. His grandson, Kublai Khan, fulfilled his desire and conquered northern China in 1264. He then conquered the rest of China, and in 1279 he established the Yuan (yoo-WAHN) dynasty. Once the Mongols were in firm control of Asia,

peace returned. Even before Kublai Khan finished the conquest of China, the Silk Road had again become safe for camel caravans.

The Mongol Empire, circa 1260



Marco Polo and His Family

Just ten years before Kublai Khan ruled northern China, Marco Polo was born in 1254 in Venice. The northern Italian city of Venice had grown rich by trading with faraway lands. Marco's father, Nicolo, and his uncle, Maffeo, were both **merchants**.

When Marco was just a baby, the two elder Polos departed on a trading journey. His mother was left alone to raise Marco. She probably saw to it that Marco received an education typical of the sons of merchant families. The boy most likely studied reading, writing, and arithmetic, and learned about foreign money. He also may have received some instruction on how to handle a cargo ship.





When Marco was 13 years old, his mother died. An aunt and uncle then cared for him. Everyone in the family must have wondered when, if ever, Marco's father and his uncle Maffeo would return.

Nicolo and Maffeo Polo finally got back to Venice in 1269. They had been gone about 14 years. They explained that their trip had unexpectedly taken them all the way to China. There, they met Kublai Khan. The great Mongol ruler had treated them very well and had asked that they return.

Almost at once, Nicolo and Maffeo started preparing for a return trip to China. This time, they decided, they would take Marco with them.

Before leaving, the Polo brothers obtained letters and gifts for Kublai Khan from the new pope, Gregory X. During their first trip to China, the Polo brothers had told Kublai Khan about the Christian religion. The Mongol ruler became very interested in Christianity. He asked the brothers to bring him missionaries and information.

The Long Trek to China

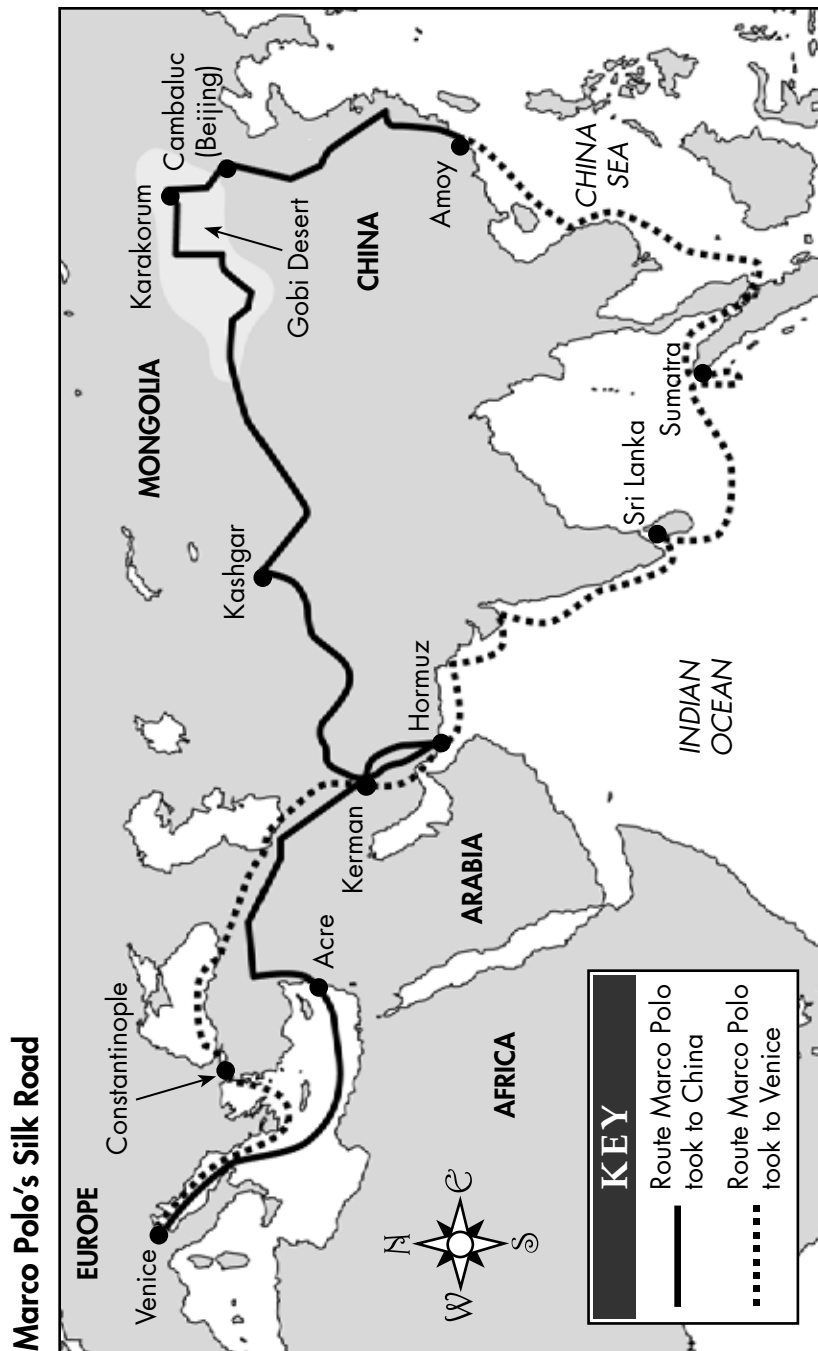
In late 1271, when Marco was 17, he left Venice with his father and uncle on their second trip to China. They were accompanied by two missionaries appointed by Pope Gregory. The travelers planned to sail to China from a port city named Hormuz in the country of Persia—present-day Iran. Since all of the ships at Hormuz were very poorly made, they decided to make the long trip to China by land instead.

They obtained camels and set off toward the East. For much of their journey, they followed the Silk Road. The journey was very difficult, taking



them across deserts and mountains. Sometimes they rode camels and sometimes horses. Early in the journey, the missionaries refused to go any farther and turned back. Marco and the two elder Polos pushed on without them.

Pope Gregory X,
1210–1276



The Gobi Desert and a modern camel caravan

One of the most difficult parts of the journey was traveling across the Gobi Desert. This is a huge, primarily rocky desert in western Asia, where temperatures soar above 45 degrees Celsius (113°F) in summer and plummet to -40°C (-40°F) in winter. Marco and his companions were relieved when the Gobi was behind them. By then, they were in China.

After traveling for three and a half years, the Polos reached the court of Kublai Khan. The Mongol ruler greeted them warmly. After the Polos had rested, they went with Kublai Khan to the capital, Cambaluc, also called Ta-tu (present-day Beijing). There, Marco was amazed by the size and beauty of Kublai Khan's palace. He called it "the greatest palace that ever was."



(Above) Marco Polo kneels before Kublai Khan. Under Kublai Khan's rule, blue and white porcelain (right) became more refined and impressed Europeans, especially the Dutch, with its quality; use of written language (below) increased; and Tibetan Buddhism, represented by figures such as Guanyin (left), flourished.



Marco Polo's Experiences in China

Kublai Khan soon gave the Polos positions of **authority**, which allowed them to get wealthy. Kublai Khan did not like using Chinese people in his government. He and other Mongols discriminated against the Chinese. All the best government positions were filled by Mongols or other **foreigners**. Marco became a member of an important government group called the Privy Council. And for three years, he was a high-ranking tax official in the city of Yangzhou (yang-JOE).

As he moved among the people of China, Marco observed them carefully. He saw that the Chinese hated their Mongol rulers. He said the people felt "that they were no more than slaves." But Kublai Khan and the other Mongols didn't care about the great unhappiness of the people. They felt secure in their power.



Marco was constantly **astonished** by China and its culture. China at that time was more advanced and wealthy than the countries of Europe.

Marco commented on several things in particular. One was a postal system that used runners and horseback riders. He was even more impressed to see the Chinese use paper money. At that time, coins were the only form of money used in Europe. Giving worthless paper the value of silver or gold demonstrated government power. China's government simply declared that the paper money it issued had value. This is how almost all paper money works today.



Modern
Chinese paper money

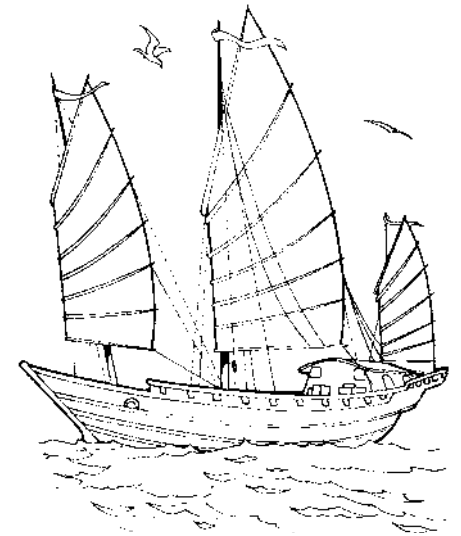
Marco was also surprised to see people using "stones that burn like logs" to create heat. These "stones" were coal. Coal was common in Europe, but people hadn't discovered its use yet.

The Return Voyage

After 17 years in China, the Polos wanted to go home. They had acquired a fortune in gold, jewels, and other treasures. Kublai Khan was now in his mid-70s, and the Polos were afraid he might die soon. If that happened, the next ruler might not let them leave with their wealth.

Kublai Khan liked the Polos and did not want them to go. Finally, however, he gave them his consent to leave if they would perform a favor for him. He asked them to accompany a Mongol princess to Persia, where she was to marry the Mongol ruler of that land. The Polos agreed, and in 1292, they and the princess departed for Persia on ships.

After taking the princess to Persia, the Polos continued their homeward journey. They traveled by both land and sea. Finally, in 1295, they arrived in Venice. They had been gone for 24 years.



Marco Polo described four-masted Chinese ships with crews of 300 people, which were more advanced than European vessels.



Miniature painting depicting Venice in the 1300s

War and Captivity

Marco Polo got home at a bad time. Venice was competing with rival Italian city Genoa for control of the Mediterranean Sea. War broke out between the two cities. Although he was now in his early 40s, Marco enlisted in the Venetian navy. He was placed in command of a war galley—a ship powered by many human rowers.

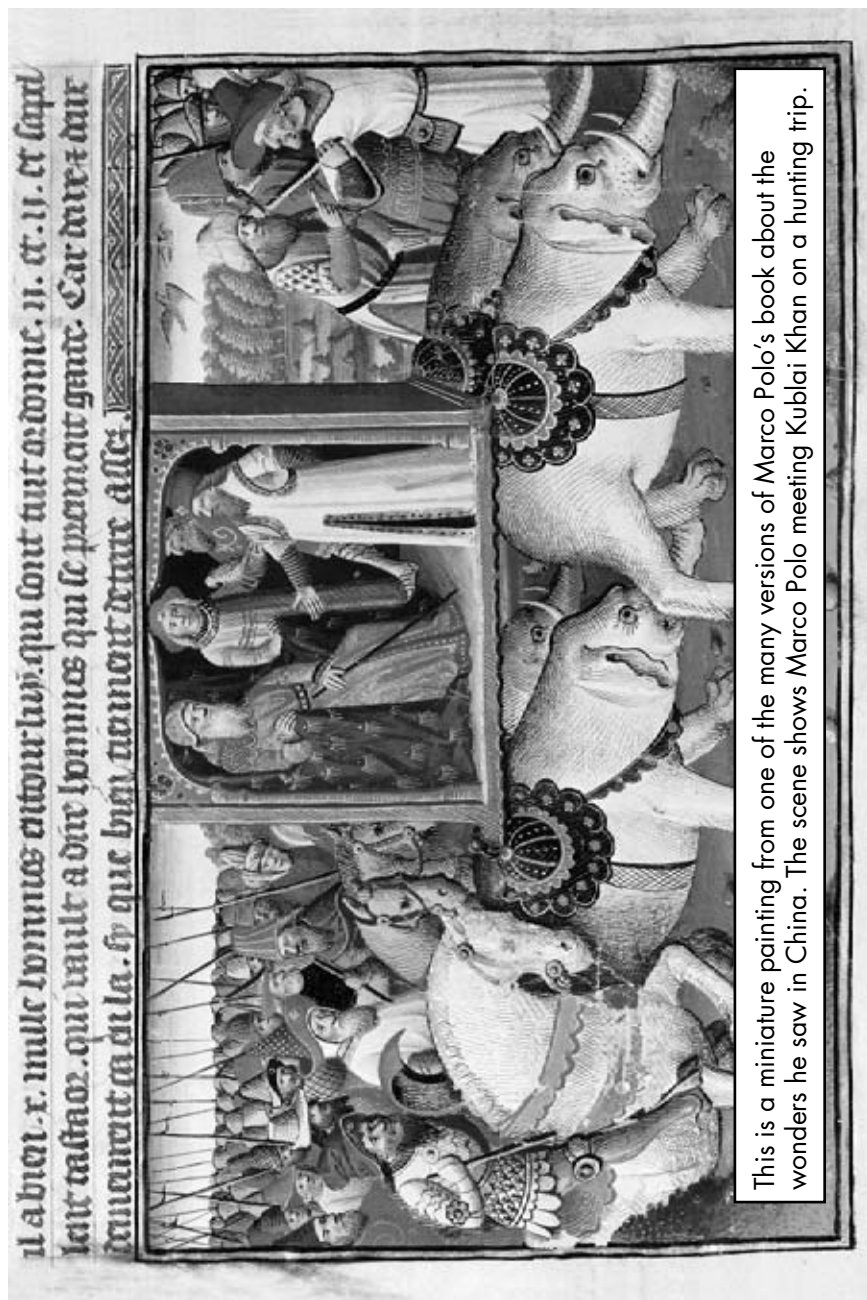
Genoa defeated Venice in the war in 1298 and took about 7,000 prisoners, including Marco. He was thrown into a prison in Genoa. There he met the writer Rustichello, whom we met at the beginning of this story.

Marco and the other Venetians spent a year in the Genoese prison. By the time they were released, Rustichello had written down all of Marco's tales about China. He was about to make Marco Polo **famous**.

A Million Stories or a Million Lies?

Marco Polo's account of his years in China first became available in 1298 while Marco was still in prison. Because printing had not yet been invented in Europe, copies of the book were all written out by hand. The book was issued in several languages and under several titles, including *The Travels of Marco Polo*, which is the title used today.

Marco's **memoir** became a sensation. And he became well known throughout Europe. People called him *Il Milione*, an Italian name meaning, roughly, *the man of a million stories*, or, as some said, *the man of a million lies*. Most readers of Marco's book considered it nothing but a collection of tall tales. They refused to believe that China could be so much more advanced than Europe.



Even today, there are doubters. Although most historians think that Marco Polo's book is a true account of his travels, others disagree. They say he probably went no farther than Persia. There, he could have learned about the wonders of China from Persia's Mongol rulers.

Why do some people still think that Marco Polo lied? It is because he made no mention in his book of some obvious things, such as tea drinking, Chinese writing, and the Great Wall of China. The doubters also point out that Chinese records from the 1200s contain no mention of the Polos.

Marco Polo always swore that he was telling the truth. When he was on his deathbed in 1324, the 70-year-old Marco was visited by a priest. The priest urged him to save his soul by admitting that his book was all lies. But Marco refused, saying, "I have not told half of what I saw."

Glossary

ancient	from a very long time ago (p. 6)
astonished	very surprised (p. 17)
authority	having the power to make laws and give orders (p. 16)
camel caravans	groups traveling on camels (p. 6)
conquests	invading and ruling other lands (p. 7)
dynasty	a group of relatives that rule for many years (p. 7)
empire	a nation that rules conquered lands (p. 8)
famous	well-known (p. 20)
foreigners	visitors from a foreign land (p. 16)
journeys	long trips (p. 5)
memoir	a retelling of one's experiences (p. 20)
merchants	people who trade or sell goods (p. 10)
mysterious	odd and difficult to understand (p. 4)
steppe	a wide area of dry land that lacks trees (p. 7)

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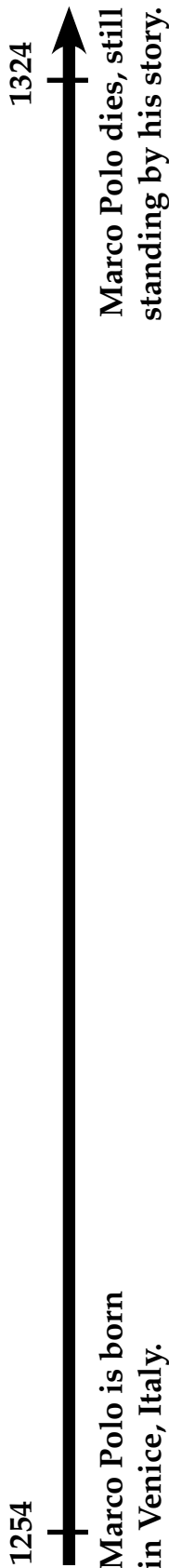
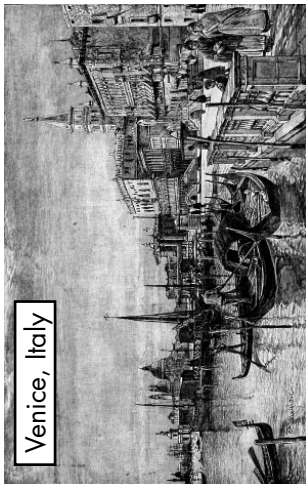
Name _____

Instructions: In the first box, write what you're curious about. In the second box, write answers to any of the questions in the first box. In the third box, write questions you still have about the topic.

What I'm curious about
Answers to my questions
What I still want to know

Name _____

Instructions: Fill in the timeline with important events in the book, along with their corresponding dates. Check to make sure that the timeline is in chronological order, even though facts may be out of order in the book.



Name _____

Instructions: Read the sentences below and decide whether they contain dashes or hyphens. Then write *dash* or *hyphen* on the short line to the left of the sentence. If the sentence does contain a dash, explain how it is used (to clarify information or to add a thought) on the lines below the sentence.

1. _____ Marco Polo was a hostage in a war between two Italian cities—Genoa, and his home city, Venice.

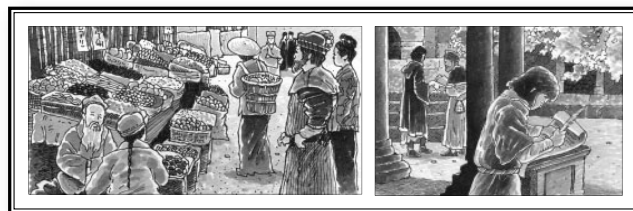
2. _____ Much of the trade with China was conducted by way of a long east-west route across the continent of Asia.

3. _____ For centuries, it was a highway for camel caravans—long lines of camels loaded with goods.

4. _____ At that time, China was being governed by a dynasty—a line of rulers from the same family or group—called the Han.

5. _____ After the Polos had rested, they went with Kublai Khan to the capital, Cambaluc, also called Ta-tu (present-day Beijing).

6. _____ He was placed in command of a war galley—a ship powered by many human rowers.



Name _____

Instructions: Write one sentence for each pair of homophones. You may use a dictionary to identify the meaning of each word, if needed. Use each homophone once in the sentence. You may add suffixes such as *-ed*, *-s*, or *-ing* to the homophones to help them fit in the sentence.

Example:

(where/wear) _____ Where were you when I decided to wear that horrible outfit?

1. (eight/ate) _____

2. (plane/plain) _____

3. (in/inn) _____

4. (flew/flu) _____

5. (red/read) _____

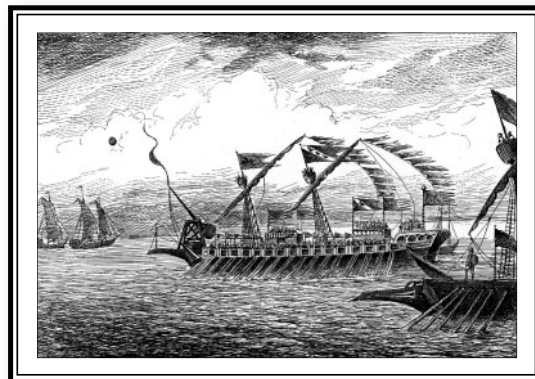
6. (cent/sent) _____

7. (knew/new) _____

8. (see/sea) _____

9. (their/there) _____

10. (hair/hare) _____



Odysseus and the Bag of Winds

A Reading A-Z Level Y Leveled Reader

Word Count: 1,770

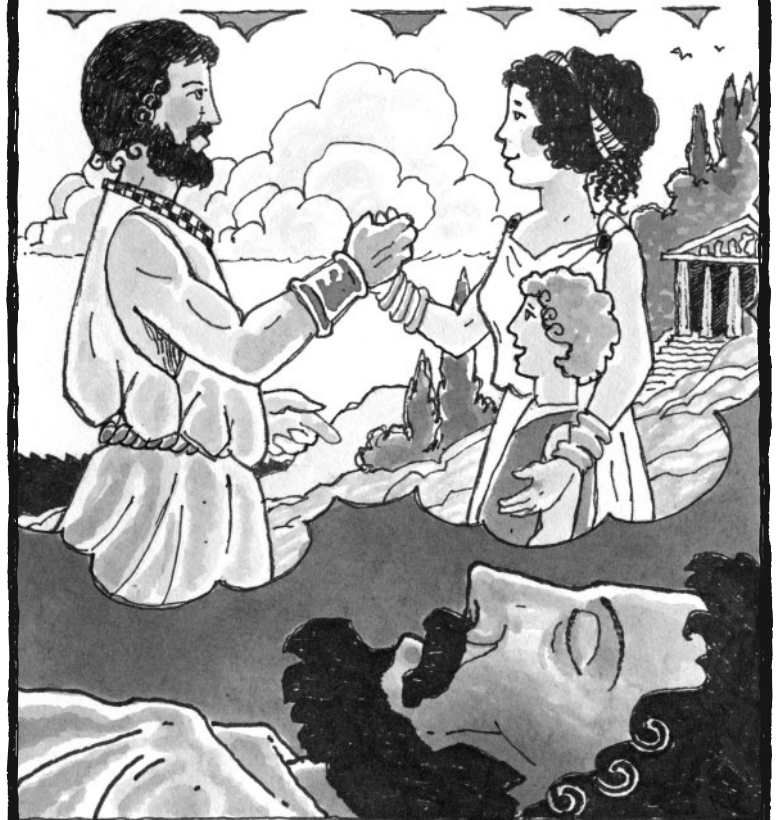



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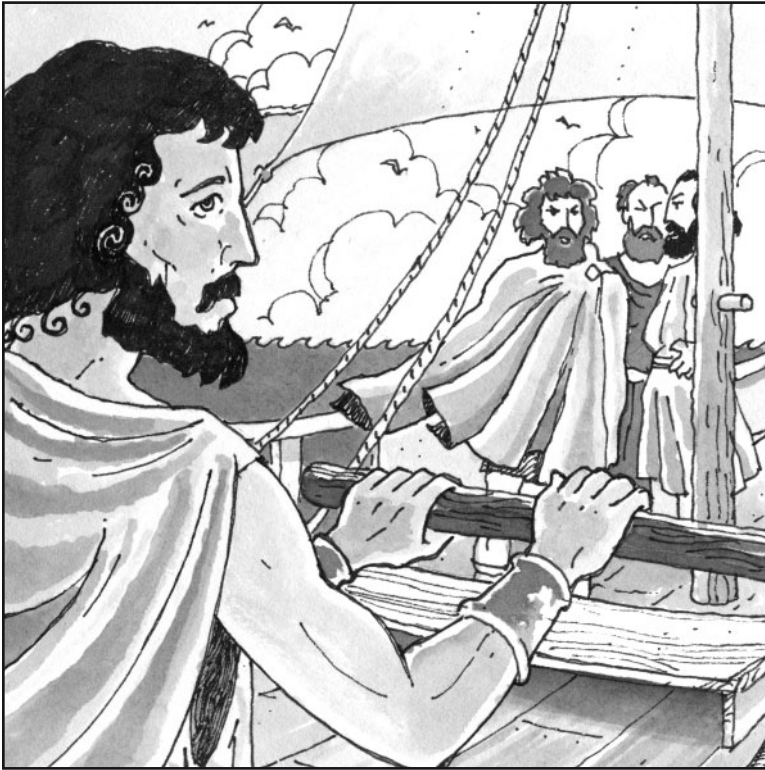
ODYSSEUS AND THE BAG OF WINDS



Written by Troy Wolff
Illustrated by Stephen Marchesi

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Prologue

Every culture in the world has its own mythology. Mythology is a set of stories from a culture's distant past, sometimes based on true events, but often made up of fantastic events and supernatural beings. The purpose of mythology is to entertain, teach lessons on how to

live, and help explain how the world works. For example, before humans developed scientific explanations for natural events like earthquakes, storms, and volcanoes, many ancient myths explained these mysterious events through stories of gods and humans. The ancient Greeks believed that lightning occurred when Zeus, their supreme being, was angry and wished to frighten or punish **mortals** on Earth by throwing down thunderbolts from high upon Mount Olympus.

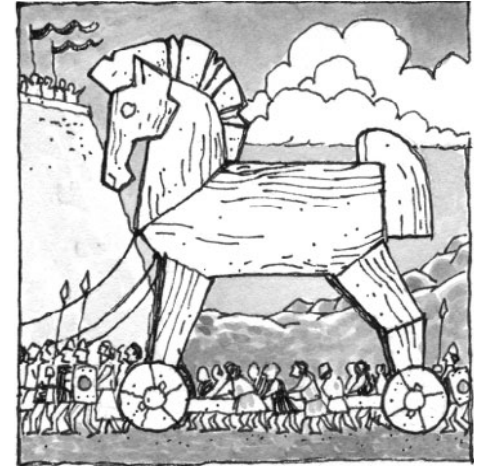


In fact, the mythology of the ancient Greeks is probably the best known of all world mythologies. Greek stories of gods, heroes, and monsters have been studied and enjoyed for more than 30 centuries, and they remain as popular today as ever. Many of the stories of Greek mythology are based on the events of a monumental ten-year war between the armies of Greece and a powerful city called Troy and its allies, located in what is now the country of Turkey. All of the Greek gods and many of the great Greek heroes took part in this great war, which is believed to have occurred in the 13th or 12th century B.C.

The poet Homer wrote a famous account of the Trojan War called the *Iliad*, but perhaps his most famous poem of all explores what happened immediately after the war ended. This **masterpiece**, called the *Odyssey*, followed the adventures of one of the greatest Greek heroes, Odysseus, as he tried to return home following the war with Troy.



It was Odysseus who won the war for the Greeks by using a large wooden horse to trick the Trojans into opening the gates of their city, not knowing that Greek warriors lay hidden inside.



Although his war strategy led to victory for the Greeks, Odysseus still had many struggles to **endure** before he would return home to his family. After the war ended, Odysseus and his men began sailing to Ithaca, their island home. What should have been a simple trip became one of the most famous journeys in all of literature. Odysseus's adventures have been read for centuries, and Homer's model of a hero's journey back home has been imitated in story after story, including movies like *Finding Nemo* and *O Brother, Where Art Thou* and adult novels like *Don Quixote*, *A Farewell to Arms*, and *Cold Mountain*.

Odysseus's journey home, which took ten years, was filled with adventure after adventure. His fantastic journey began with the tale of Aeolus and the bag of winds.

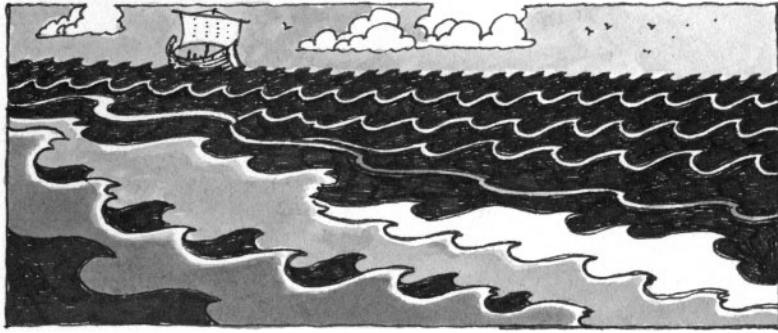
A Visit with an Old Friend

After victoriously leaving Troy to sail for home, Odysseus and his men stopped to visit Odysseus's friend, Aeolus (EE-oh-luhs), god of the winds. Aeolus welcomed the victors. Odysseus and his men, exhausted after the war, feasted and celebrated for a full month with Aeolus. In return for listening to Odysseus tell many stories of the war, Aeolus offered Odysseus a magical gift to speed him on his way home to Ithaca. The god of the winds gathered all of the wild and dangerous winds that might have blown Odysseus off course. He forced these winds into a magical ox-hide bag, sealing them with a golden cord. He left out only one wind, a steady west wind, which would speed Odysseus and his men homeward.



With much gratitude, Odysseus accepted the gift, amazed that such power could be held in his hands. Not trusting his men to understand such a magical gift, Odysseus quietly **stowed** the bag under the captain's seat on his ship, and the men prepared to sail for Ithaca.



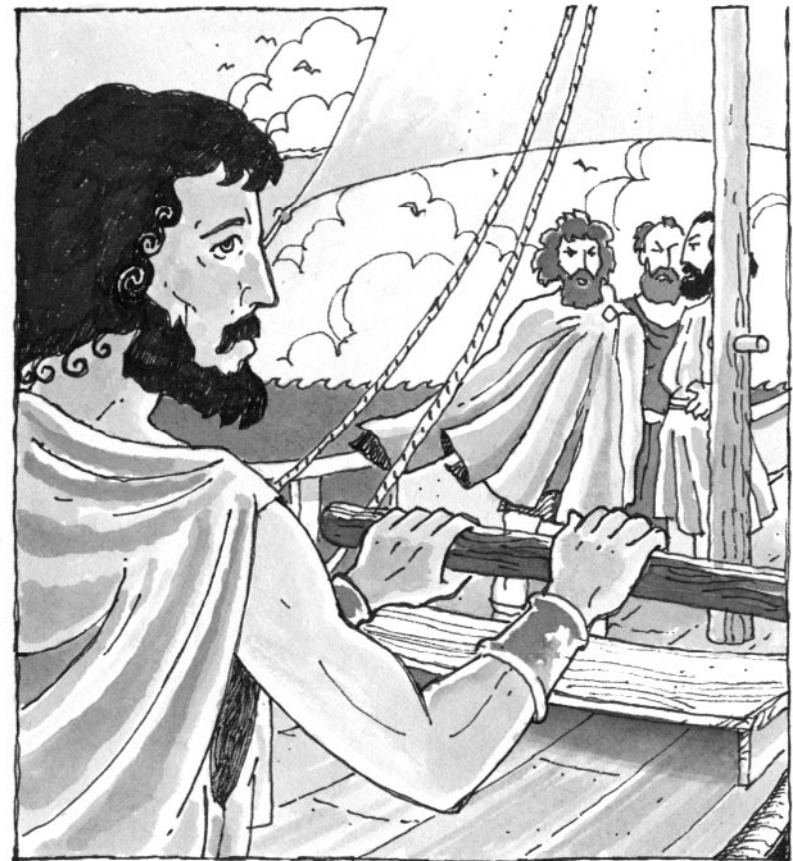


Aeolus's Gift

Aeolus's gift worked perfectly at the beginning of their journey. For nine days, Odysseus's ship carved a smooth and steady **wake** through the blue waters of the Aegean Sea, always heading westward toward Ithaca. With each passing hour, Odysseus grew more anxious to see his home. The war with Troy had lasted ten long years, and during that time Odysseus had never once seen his wife, Penelope, nor his young son.

He was so determined to return home that he refused to **relinquish** the **helm** of his ship to anyone else. For nine days and nights Odysseus stayed at the helm with his eyes peering through the salt spray to catch a glimpse of his homeland. His men were a bit insulted at Odysseus's lack of trust in them. They were all good sailors. *Of course we can steer the ship just as well as Odysseus,* they often thought to themselves.

They had also noticed the bag tied with the golden cord sitting under Odysseus's seat—the bag that he seemed to be protecting very carefully. But these concerns were not important to the men at the time. Each of them was also anxious to return home after the war. *If Odysseus insisted on steering the boat by himself, let him do it,* they said to themselves. It simply meant they each had more time to sleep and dream of home.





Almost Home

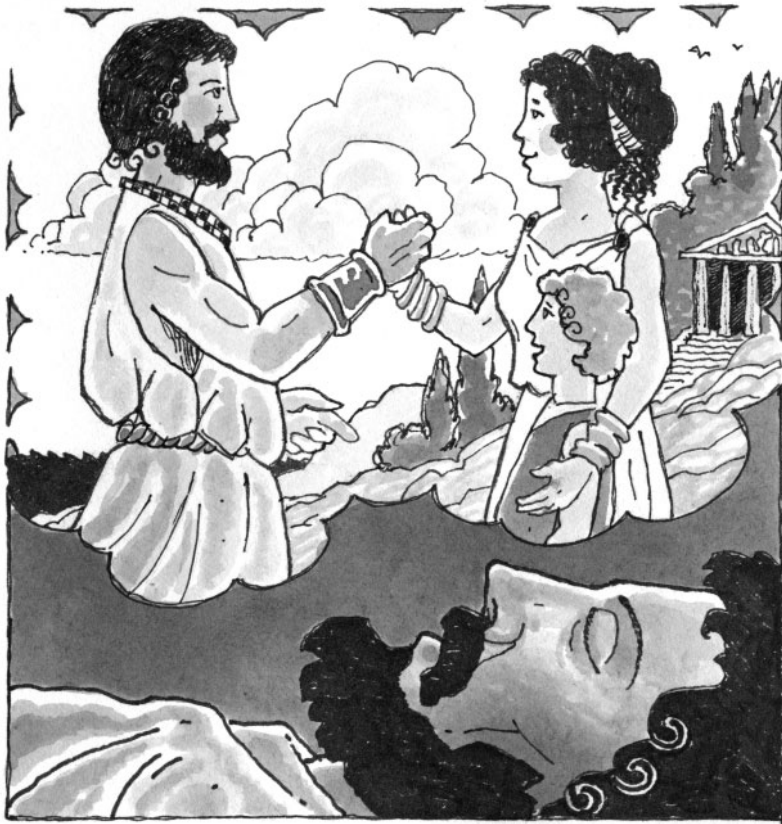
“Odysseus! Look!” Odysseus snapped out of his daydreaming as one of his men cried out from the bow of the ship. Shading his eyes from the glare, Odysseus peered ahead. A faint mist hovered above the surface of the water, and scattered clouds dotted the sky, but sure enough, as he stared more closely, a familiar outline rose on the horizon. It was the jagged peaks of Ithaca! Odysseus could recognize the shape of his beloved island anywhere, and his heart leaped up into his throat to see its familiar curves and points.



The rest of Odysseus’s men saw the same view a few moments later, and the entire ship erupted into cheers and laughter. Men hugged each other and wiped tears of joy from their eyes. After ten long years of separation from family and friends, they would soon be back home—in perhaps only a few more hours.

As the outline of Ithaca became sharper and clearer, Odysseus’s spirits soared. He would finally see his wife, Penelope, and his son, Telemachus (tuh-LEM-a-kuhs). Telemachus was an infant when Odysseus left for the war.

How Telemachus would have grown in ten years! Would he even recognize his father? As these thoughts entered Odysseus's mind, his eyelids grew very heavy. Ithaca is only hours away. We can see it plainly. Surely I can shut my eyes now and leave the steering to the men, Odysseus said to himself as he struggled to stay awake. Turning to his most trusted companion, Odysseus relinquished the helm, crawled over to a nearby bench, and immediately fell sound asleep, dreaming of Penelope and his son.



Jealousy and Greed

With Odysseus asleep and Ithaca within sight, the men began talking quietly to themselves. "Look at Odysseus there—so proud that he was unwilling to let his trusted companions steer the ship."

"We've fought together for ten years, and he can't even trust us to steer his ship."

"You know, Odysseus is a great soldier, but he did not share with us fairly the gifts won from Troy."

"That's true. With every victory, he always took the lion's share and left us with the rest."

"Yes, and what about this gift from Aeolus? Odysseus told us nothing of Aeolus's treasure as we left his island."

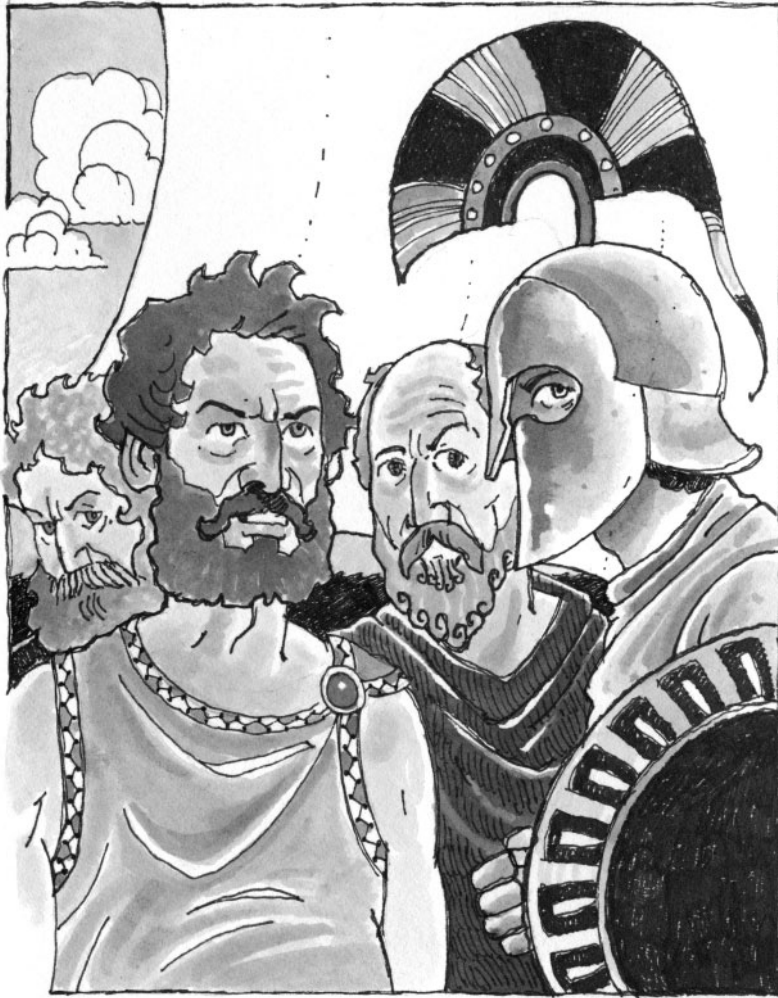
"Look at that bag, tied with a golden cord."

"Yes, why wouldn't Odysseus tell us about this bag?"

"Because he doesn't want to share with us the gifts of Aeolus."

"Exactly! The bag is surely filled with gold and jewels. Just look at that golden cord."

"And look how carefully Odysseus protected it from us."



The more the men talked, the angrier they became at Odysseus and the more anxious they became to open the ox-hide bag sitting under the bench. With one last look at Odysseus sleeping soundly on the bench, the men silently nodded to each other and reached for the bag.

But with one tug of the golden cord, everything changed. Raging, hurricane-force winds exploded from the ox-hide bag. Bottled up for the last nine days, winds from every direction furiously crashed down and around Odysseus's ship, tossing it around on the waves as if it were a child's toy.



Odysseus's sweet dreams of home turned into a nightmare of howling winds and crashing waves. Opening his eyes, he saw his men panicking, rushing around the deck, waving their arms, and covering their heads against the winds and waves. At their feet, he saw the empty ox-hide bag. "What have you done?" he cried. "Your greed and jealousy have ruined us!"

Unable to hear Odysseus over the howling winds, the men rushed over the ship, trying to keep it from **capsizing** in the storm. Suddenly, with a great snapping and ripping sound, the mast came crashing down, pulling the sails with it.

Heartbroken, Odysseus watched helplessly as his home began fading away in the distance. With no sails on the ship and no way to steer, Odysseus and his men were being blown over the furious seas away from Ithaca, back in the direction from which they'd come.

Oh, weak man! Why did I let myself sleep? Odysseus cried to himself. *Hours from home, and now this!* He prayed to Poseidon, god of the seas, to calm the waves, and to Zeus, god of the sky, to end the storm. However, his prayers went unanswered. The gods had other things in store for Odysseus, and he would not see his home for many more years.

Epilogue

Driven by the howling winds, Odysseus and his men cowered in fear onboard their ship, helpless to sail in the storm. Eventually, they ended up back at Aeolus's island. "Odysseus, why are you here?" Aeolus asked, as the men came ashore.

With great shame, Odysseus told Aeolus what happened with the bag of winds. "It was not my fault," he said. "It was my men." He **pleaded** with Aeolus to help him once again.

However, despite Odysseus's desperate pleadings, Aeolus was firm. "Surely the gods have decided to test you, Odysseus," he said. "To be turned away after getting so close to home can only mean the gods are against you, and I cannot go against the gods' wishes. Good luck to you, wise Odysseus. I cannot help you again."

Aeolus was right. Odysseus would suffer much bad luck, and struggle mightily, before he would finally reach Ithaca. But these journeys proved Odysseus to be the craftiest, most clever mortal on Earth, and his journey became one of the greatest stories ever told.



Look for the Odyssey at your local library or bookstore. Read about the many adventures of Odysseus and how human traits such as jealousy, pride, gluttony, and others prevented him and his crew from returning home sooner.

Glossary

- capsizing** (*v.*) overturning (p. 17)
- endure** (*v.*) to survive, experience, or live through (p. 6)
- epilogue** (*v.*) a short section at the end of a piece of writing, often telling what finally happens to the characters (p. 18)
- helm** (*n.*) the wheel or handle used to steer a ship (p. 9)
- masterpiece** (*n.*) an extraordinarily good piece of writing or other creative work (p. 5)
- mortals** (*n.*) human beings, who will die eventually (p. 4)
- pleaded** (*v.*) begged; asked with urgency (p. 18)
- prologue** (*n.*) a section at the beginning of piece of writing, often one that provides background information (p. 4)
- relinquish** (*v.*) to give something up or turn it over to another person (p. 9)
- stowed** (*v.*) put away; stored (p. 8)
- wake** (*n.*) the track that a vessel leaves in water as it moves (p. 9)

Name _____

Instructions: Write the character's name on the line. In the box for each chapter, list the character's traits, along with story clues that helped you identify each trait.

Character: _____

Character's Trait and Story Clues

Chapter 2

Character's Trait and Story Clues

Epilogue

Character's Trait and Story Clues

Chapter 1

Character's Trait and Story Clues

Chapter 4

Character's Trait and Story Clues

Prologue

Character's Trait and Story Clues

Chapter 3

Name _____

Instructions: Read the sentences below. Circle each adverb and underline the verb that it describes or modifies. Then, on the line, write the root word for the adverb.

1. After victoriously leaving Troy to sail for home, Odysseus and his men stopped to visit Odysseus's friend, Aeolus.

2. Aeolus's gift worked perfectly at the beginning of their journey.

3. Odysseus watched helplessly as his home began fading away in the distance.

4. It simply meant they each had more time to sleep and dream of home.

5. Winds from every direction furiously crashed down and around Odysseus's ship.

6. As he stared closely, a familiar outline rose on the horizon.

7. They would be safely back home—in perhaps only a few more hours.

8. We can see it plainly.

9. Odysseus relinquished the helm and immediately fell sound asleep.

10. The bag is surely filled with gold and jewels.

Name _____

Instructions: Write one sentence for each pair of homophones. Use each homophone once within the sentence. You may add suffixes such as *-ed*, *-s*, or *-ing* to the homophones to help make them fit in the sentence.

Example: (*wear/where*) *Where* were you when I decided to *wear* that outfit?

1. (ant/aunt) _____

2. (capital/capitol) _____

3. (dear/deer) _____

4. (heard/herd) _____

5. (peace/piece) _____

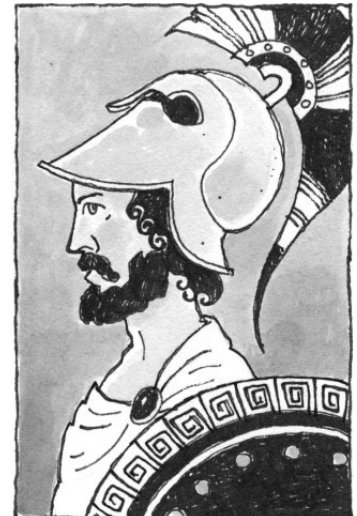
6. (rain/reign) _____

7. (role/roll) _____

8. (sail/sale) _____

9. (threw/through) _____

10. (wait/weight) _____



Believe It or Not?

A Reading A-Z Level Y Leveled Reader

Word Count: 1,753



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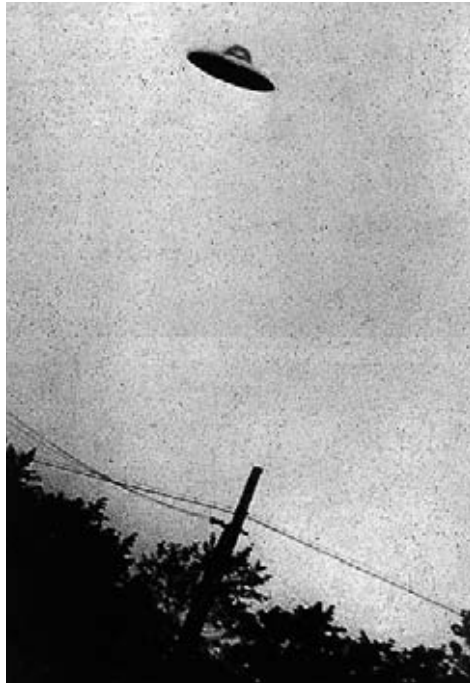
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Correlation

LEVEL Y	
Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A



An amateur photographer took this picture in 1952 of what many thought was an alien spacecraft. Do you think it's real or a hoax?

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Was this young king's tomb protected by a curse?



Can anyone explain the mysterious losses of ships and planes?

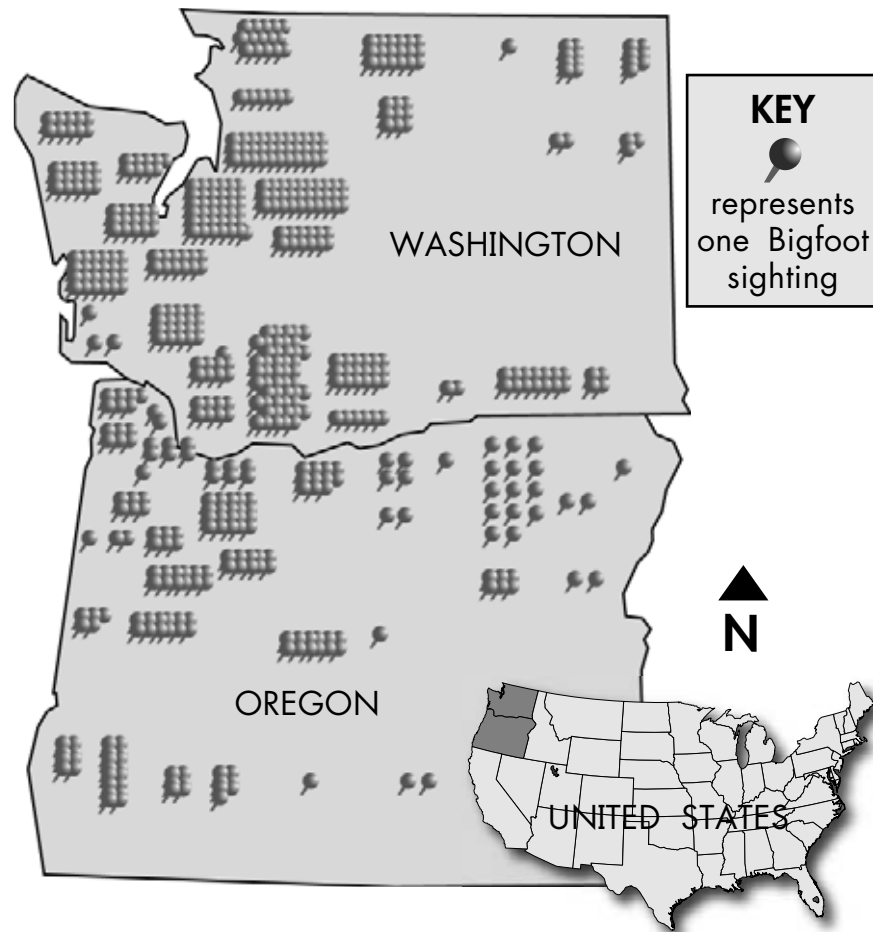
Introduction

If you heard that hairy, smelly giants live in our wilderness, or that **extraterrestrials** make pictures in wheat fields, would you believe it? What if a friend told you an ancient curse causes people to die, or that something in a part of the Atlantic Ocean makes ships and planes disappear? How would you know whether or not these stories were true?

After reading this book, you'll have **evidence** about these four unsolved mysteries. You can decide whether you think they're real or fake.



Who or what has made such intricate designs on acres of fields?



Bigfoot

In remote areas of the Pacific Northwest, Native Americans have told stories for hundreds of years of having encountered gigantic, **reclusive**, apelike creatures. The Salish Indians of Canada called them Sasquatch, which means “wild man of the woods,” but other tribes use different names. English speakers most often use the name Bigfoot.

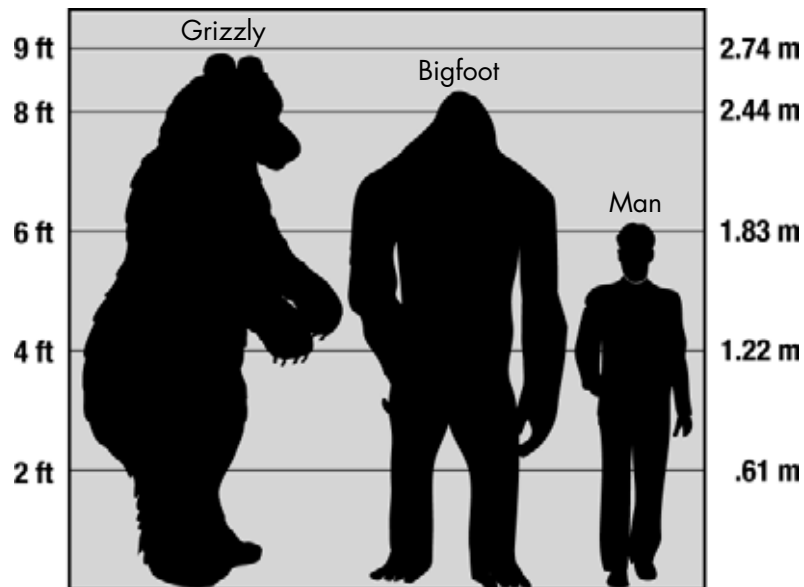


Roger Patterson took this picture in 1967. Is it a Bigfoot, a bear, or a human in a gorilla suit?

In addition to Native Americans, others who have reported encounters with this creature are railway and forest workers, hikers, travelers, and people who live in remote areas. Most of them have never heard the Native American stories, so they haven’t had the opportunity to be influenced by other accounts of these creatures.

A Bigfoot is reported to be huge, as much as 8 feet (2.5 m) tall, with hair all over its body. Based on the depth of its enormous footprints, its weight is estimated to be between 350 and 800 pounds (160 and 360 kg). People who see one usually report hearing high-pitched screams and smelling a terrible odor.

Cryptozoologists (scientists who study hidden animals) and other curious people have spent a great deal of time and money to find out whether Bigfoot really exists. After following up on thousands of eyewitness reports, they have not yet been able to find proof.



Bigfoot is believed to be smaller than a grizzly bear but taller than the average man.



Albert Ostman swore that he spent nearly a week with a family of Bigfeet in 1924.

In 1924, a lumberjack named Albert Ostman went into the mountains alone to prospect for gold. During the third night of his trip, he was carried off in his sleeping bag by something huge and smelly. After several hours, it dropped him in a clearing, where four huge, hairy, ape-like creatures surrounded him. They seemed to be a family made up of a father, a mother, and two children. Albert escaped, badly shaken but unharmed, after nearly a week. This is just one of many reports of Bigfoot encounters, though not all were so peaceful.

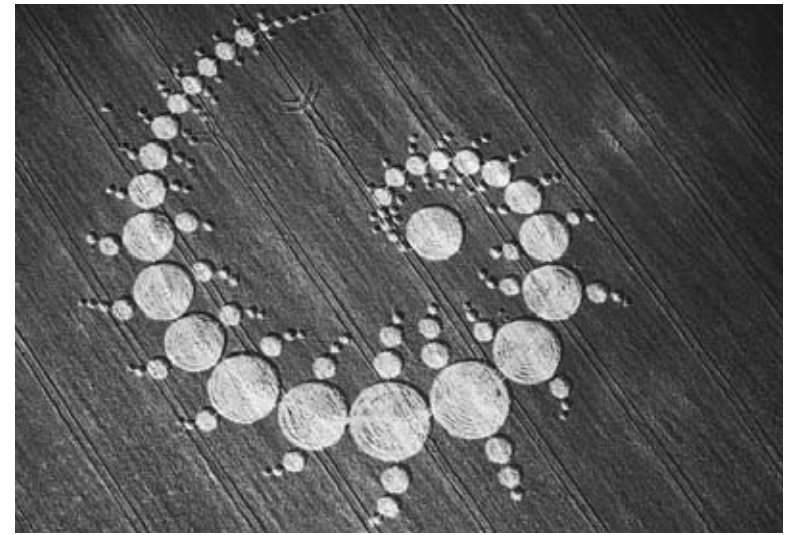
In the vast uninhabited forests and glaciers of the northwestern United States, nature quickly gets rid of dead bodies. They **decompose** or are eaten by insects or other animal scavengers. However, scientists believe that if Bigfoot does exist, someone should be able to find a dead body, a skeleton, or fossil remains, yet none has ever been found.

In 1977, a Bigfoot sighting in northern Washington turned out to be a **hoax** planned by three young men with gorilla suits and walkie-talkies. This makes people think that other reports must have been faked as well.

Do you think the Bigfoot sightings are real or a hoax?



A man's foot compared to a cast of a Bigfoot foot print



Many crop circles are very large. This one consisted of 149 circles and appeared near Stonehenge within 20 minutes in broad daylight.

Crop Circles

In fields of tall crops, circles where the plants have been flattened were reported as early as 1590. Farmers thought they were made by wind. In the 1980s, the number of circles increased dramatically, and since then, they have changed from simple circles to complex designs.

Most crop circles form mysteriously in the night, but a few people report having seen them formed by spaceships or whirlwinds. Sometimes lights are seen in the sky and humming or music is heard, and sometimes radiation can be detected inside the circles.

The crops inside circles are not crushed, but instead are bent at the lowest **node** on the stalk. Often these bent crops grow better than the unbent plants outside the circle. Scientific experiments suggest that high-powered microwave beams might cause the crops to lie down in this way. But from where would they come, and who would be controlling them? Some people think they are messages from beings on other planets.

In areas where many circles are found, people who watch the fields overnight for signs of activity and new circles say that **intricate** circle patterns can appear in just a few minutes.



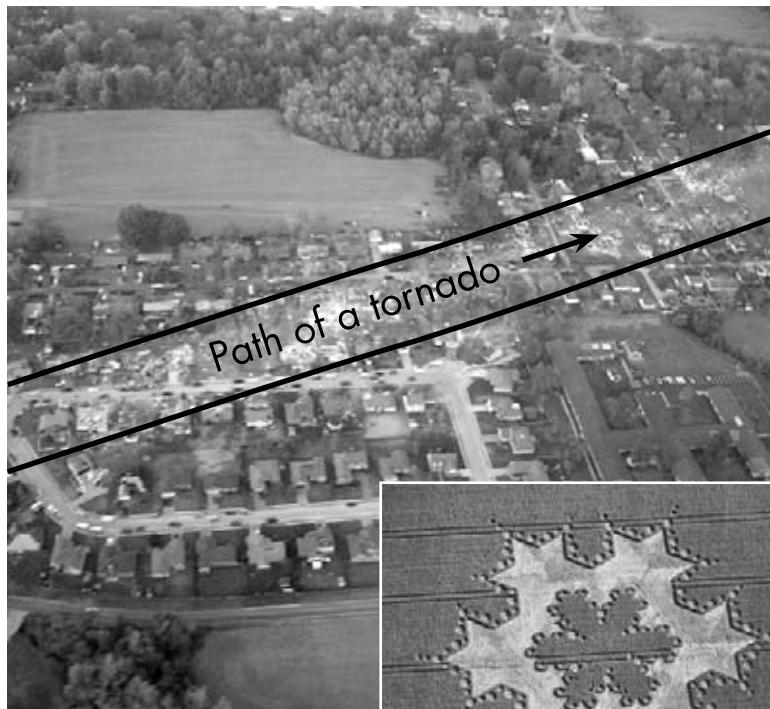
The stalks inside a circle bend in a spiral pattern.

Many crop circles are made by humans, for a variety of reasons. Some people just want to prove that it can be done, some people want to play tricks, and others who call themselves “crop artists” say that God inspires them.

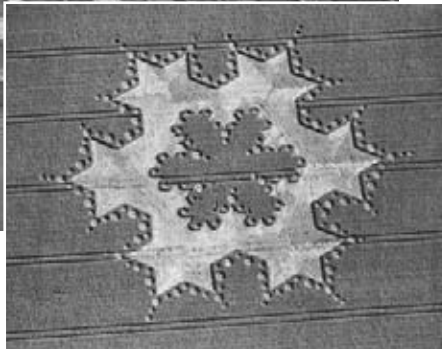
In 1991, Englishmen Doug Bower and David Chorley claimed they had made every crop circle since 1978. Some people accepted their explanation of a gigantic hoax. But others doubt they would have the skill and strength to create huge patterns in the dark of night without being seen. Doug **retracted** his confession seven years later and declared that “unknown forces” made the circles.



Dr. Joe Nickell demonstrates how to make a crop circle in an oat field. Someone could fake crop circles, but it's a lot of work.



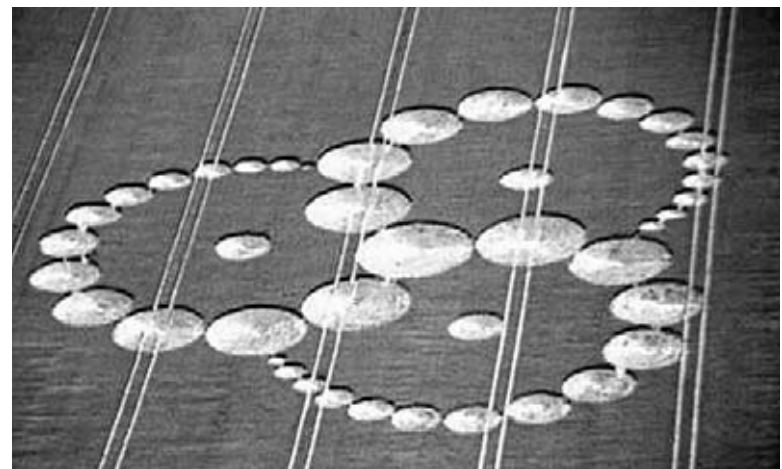
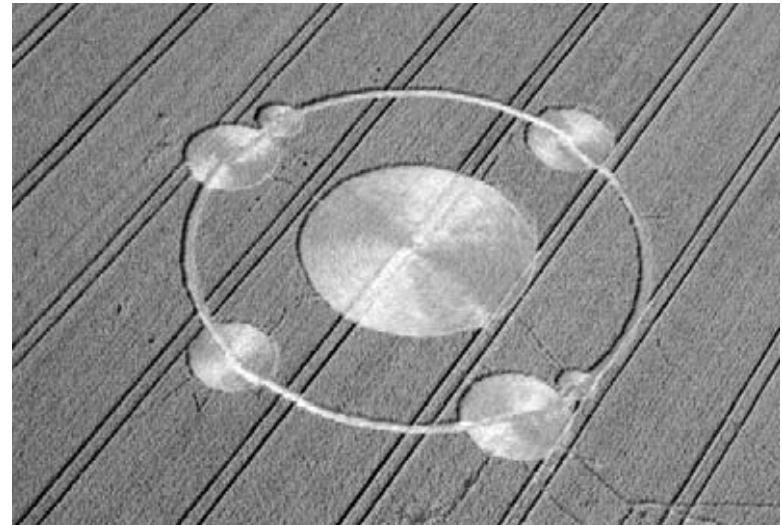
Damage caused by tornadoes cover a wide area while crop circles are intricately formed.

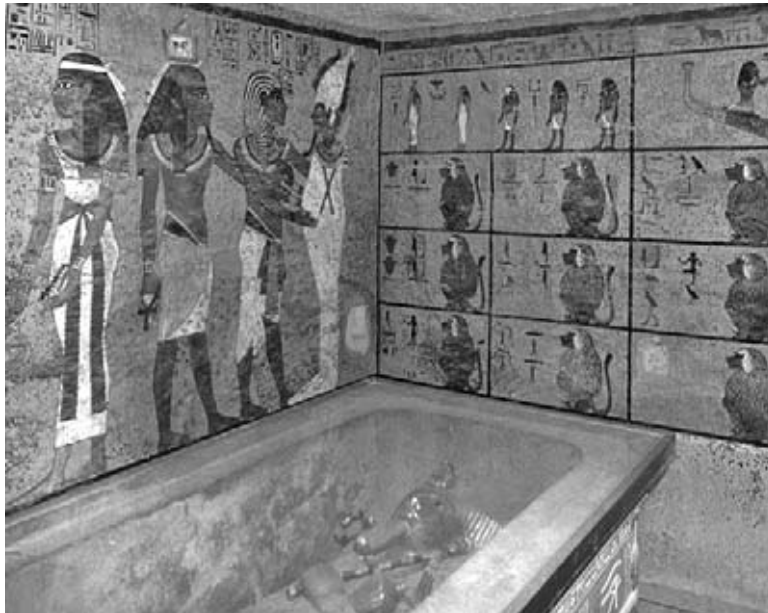


Some people suggest that the circles are created by tornadoes, but crop circle designs are controlled and intricate, while a tornado destroys a wide area. Another weather theory is based on an electrically charged whirlwind called a plasma vortex. A plasma vortex can create the strange lights and humming sounds reported by crop circle eyewitnesses. It can **hover** in one place or move as if it's under remote control, which could make it look like a UFO.

Some researchers have suggested that the U.S. and British military are developing a high-energy weapon powered by microwaves. In this scenario, crop circles are produced by test firings of this top-secret weapon.

Do you think crop circles are real or a hoax?





King Tut's tomb was filled with valuable treasures.

The Curse of the Mummy

In 1922, Howard Carter discovered the tomb of the Egyptian **pharaoh** Tutankhamun, known today as King Tut. The tomb was filled with incredibly valuable treasures. In 1922, newspapers circulated stories of a curse painted on a tomb wall that said, "They who enter this sacred tomb shall swift be visited by wings of death."

Early Egyptians believed that cobras are the protectors of the Pharaohs. On the day Carter opened the tomb, his canary was swallowed by a cobra.

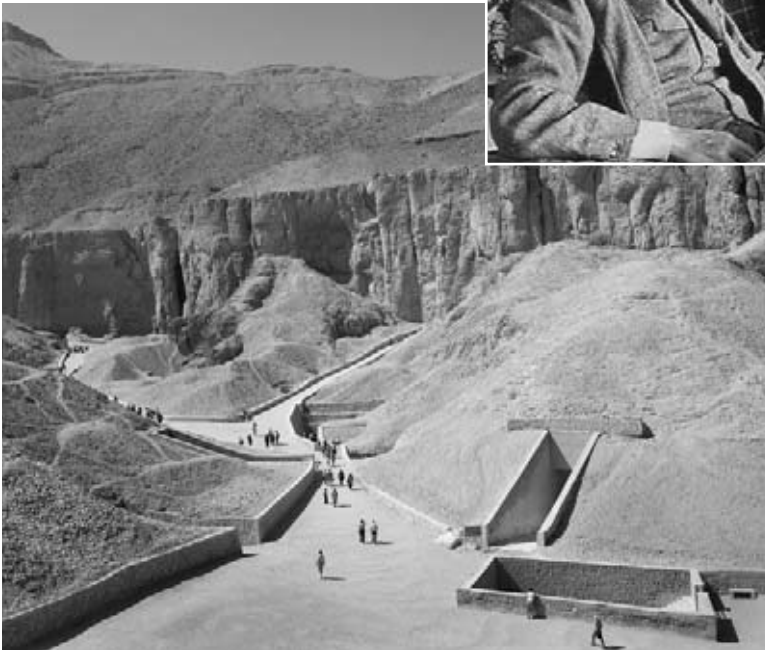


Howard Carter opens a door to King Tut's tomb in 1922.

Carter's search for the tomb was funded by Lord Carnarvon. When Lord Carnarvon died in Egypt in 1923, newspaper stories said that he was killed by a pharaoh's curse. It was also said that Carnarvon's dog howled and dropped dead in England at the same minute as his owner.

The newspapers reported that 26 people involved with finding the tomb died in the first 10 years. Many of these deaths were supposed to involve suspicious circumstances. This mystery has been so fascinating that it has been used as the theme for many movies, books, and games.

In the early 1900s, reporters sometimes invented facts to make stories more exciting. Lord Carnarvon had actually been sick for 20 years before he died, so the timing of his death might have been just a coincidence. Research shows that actually only six people involved with finding the tomb died in the first ten years. Howard Carter worked on the tomb for at least ten years, and yet he lived for 17 years after the discovery, and the curse that was reportedly written in the tomb was not there at all.



Lord Carnarvon, inset, funded the search for King Tut's tomb in an area of Egypt called the Valley of the Kings, above.

It is possible that dead bodies produce bacteria that could cause illness and death. Could this have contributed to Lord Carnarvon's death? Today's **archeologists** wear rubber gloves and clothing that protects them, but early people who robbed tombs might have gotten sick in this way. This might have been how stories of a curse got started.

Early Egyptians went to a lot of trouble to prepare their kings for burial. They believed that kings should be buried with riches to use in their next life. These Egyptians may have started legends of danger to keep people away from the tombs.

Do you think the curse of the mummy is real or a hoax?



Egyptian pharaohs were buried in pyramids.



Some people include a larger area when describing strange events in the Atlantic Ocean.

Bermuda Triangle

Strange things have been happening to ships and planes for years in an area of the Atlantic Ocean that is generally between Florida, Bermuda, and Puerto Rico. In 1965, Vincent Gaddis wrote a book about these strange occurrences called *Invisible Horizons*. He was the first to call the area the Bermuda Triangle, and he also called it the Triangle of Death.

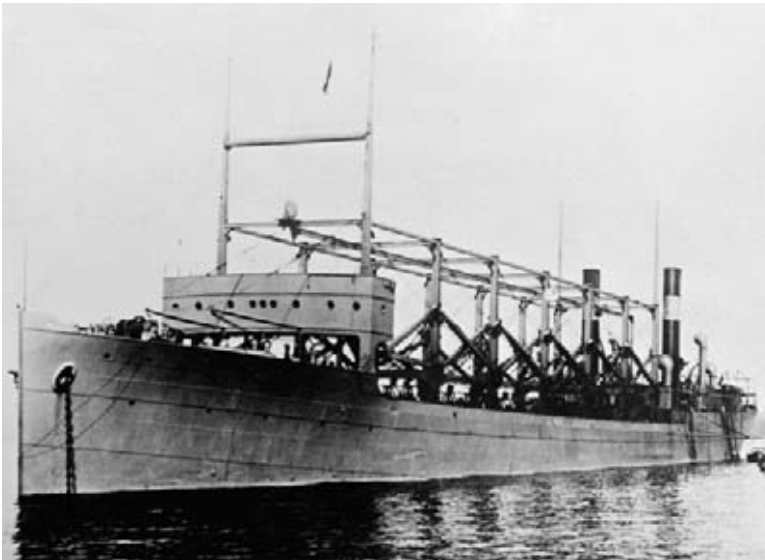
In this area, numerous planes and ships disappear without a trace. Crews mysteriously disappear from ships, dense fogs suddenly appear, and compasses and navigation equipment won't work.

On a clear day in 1945, while a group of planes called Flight 19 was on a routine training mission, all five Avenger bombers lost their bearings and disappeared. The rescue airship that went to look for them disappeared as well.

In 1881, the merchant ship *Ellen Austin* discovered a ghost ship floating without a crew, yet there were no signs of struggle on board. A crew boarded to steer her to port, but when a thick fog surrounded both ships, they lost contact overnight. When the ghost ship was found the next day, the second crew had disappeared as well.



If a deserted ship could be brought to port, the crew could claim a reward.



The USS *Cyclops* disappeared in 1918 with 306 people on board and is one of the earliest incidents linked to the Bermuda Triangle.

In 1966, Captain Donald Henry's tug, the *Good News*, was towing a cargo barge from Puerto Rico to Florida. When a dense fog suddenly swirled around the barge, the *Good News* lost the use of all of its instruments and partially lost power. For five minutes the *Good News* struggled in a tug of war with the fog bank; it finally managed to pull itself and the barge free.

People claim that a mysterious power causes the many losses of ships and crews in the Bermuda Triangle. Because weird lights are seen there, some think that UFOs capture humans and take them away.

Others say the unexplained losses are a result of the severe weather common in the area. Hurricanes and violent waterspouts blow up suddenly, and tidal waves are common. Any vessel that is destroyed would wash away without a trace. Some of the missing crews, when rescued later, tell stories of being forced to leave their storm-damaged ships.

Some say that nothing unusual is going on in the area. They suggest that some of the losses blamed on the Bermuda Triangle actually happened hundreds of miles away. Other vessels that have been reported lost actually showed up later.

Do you think the Bermuda Triangle is real or a hoax?



In the vast ocean, violent weather could destroy a ship and not leave any evidence.



How were the Moai statues carved and moved?



Why and how were these structures built?

Conclusion

Mysterious occurrences—things we can't understand—will always exist. Some people will think they are nonsense, and others will claim they are real. Now that you've read evidence here about four of them, it's time to consider what you've read and determine what you believe. You can use the Internet and the library to find more information. What do you think about these mysteries, and what others can you find?

Glossary

archeologists (<i>adj.</i>)	people who study prehistoric people and cultures (p. 18)
decompose (<i>v.</i>)	decay, rot (p. 9)
evidence (<i>n.</i>)	information that proves something is true or false (p. 4)
extraterrestrials (<i>n.</i>)	beings from outside Earth or its atmosphere (p. 4)
hoax (<i>n.</i>)	something meant to deceive or trick (p. 9)
hover (<i>v.</i>)	to hang in the air (p. 13)
intricate (<i>adj.</i>)	complicated, complex (p. 11)
node (<i>n.</i>)	a joint on a stem (p. 11)
pharaoh (<i>n.</i>)	a king of ancient Egypt (p. 15)
reclusive (<i>adj.</i>)	shut off or apart from the world; solitary (p. 5)
retracted (<i>v.</i>)	take back, withdraw (p. 12)

Name _____

Instructions: Write questions you would like to have answered about the topics in the book *Believe It or Not?* under the *Questions* heading. Write answers to these questions under the *Answers* heading.

Questions	Answers

BELIEVE IT OR NOT? • LEVEL Y • 1

SKILL: ASK AND ANSWER QUESTIONS

Name _____

Instructions: Write up to four of the main ideas from the book in the left-hand boxes. In the right-hand boxes, list up to three details that support each main idea.

Main Idea: "Bigfoot"	Details 1. 2. 3.
Main Idea: "Crop Circles"	Details 1. 2. 3.
Main Idea: "The Curse of the Mummy"	Details 1. 2. 3.
Main Idea: "Bermuda Triangle"	Details 1. 2. 3.

BELIEVE IT OR NOT? • LEVEL Y • 2

SKILL: MAIN IDEA AND DETAILS

Name _____

Instructions: Read each sentence. Choose a word from the box that completes each sentence by changing the word into an adverb. Write the new word on the line in each sentence and circle the verb each adverb describes. Then write two sentences of your own using adverbs, circling the verb the adverb describes in each sentence.



reported

actual

mysterious

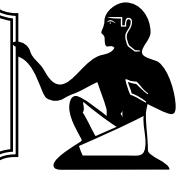
eager

eventual

sudden

dramatic

greedy



1. In the 1980s, the number of crop circles _____ increased.
2. Most crop circles form _____ in the night.
3. The curse _____ written in King Tut's tomb was not there at all.
4. In the Bermuda Triangle, dense fogs _____ appear.
5. Curious people _____ spend a great deal of time and money to find out whether Bigfoot exists.
6. Scientists believe that if Bigfoot does exist, someone will _____ find remains of a body.
7. Early people who _____ robbed tombs might have gotten sick from bacteria.
8. Some people suggest that the losses blamed on the Bermuda Triangle _____ happened hundreds of miles away.

My sentences:

1. _____

2. _____

Name _____

Instructions: Choose the correct suffix from the bank to complete the word in each sentence. Write the new word in the blank provided and the meaning of the new word after each sentence. The first one is done for you. Then at the bottom of the page, write the root word for each word in the space provided.

-ly -ous

Example:

The students behaved (bad) badly during the assembly.

in a regretful way

1. Pink eye is a very (infection) _____ disease to catch.

2. She (sad) _____ watched as Megan and her family got in the car to leave.

3. The holidays are always a very (joy) _____ time for our family.

4. Everyone went to the (religion) _____ ceremony.

5. The goalie (quick) _____ dove for the ball.

6. The children (patient) _____ waited for their dessert to arrive.

7. rapidly _____

8. gracious _____

9. bravely _____

10. cautious _____

Prehistoric Giants (Other Than Dinosaurs)

A Reading A-Z Level Y Leveled Reader

Word Count: 2,161

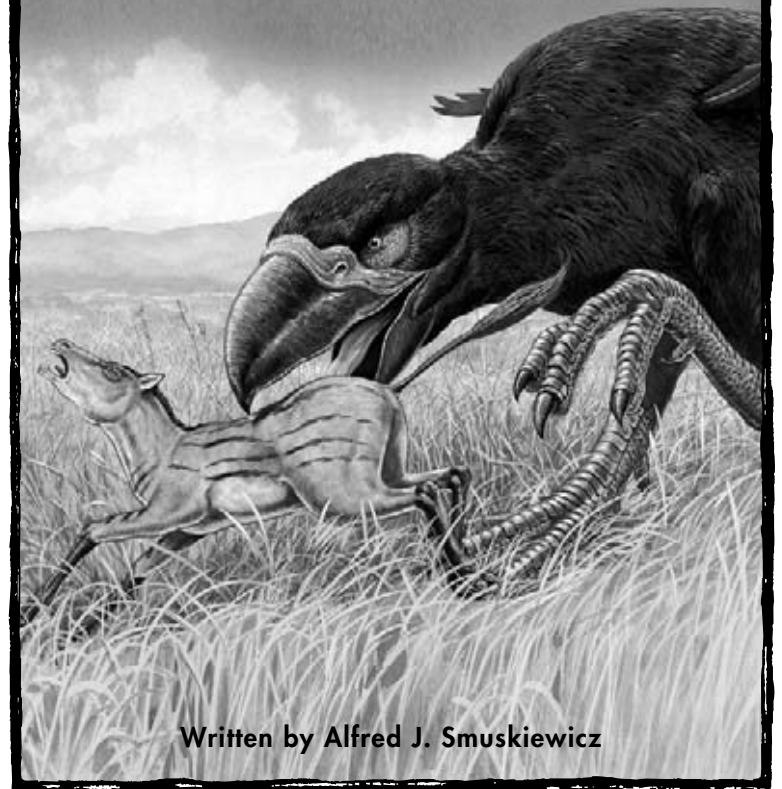



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Prehistoric Giants (Other Than Dinosaurs)



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Front cover: *Gastornis* attacks prey.

Back cover: Emu feet look as if they might belong to a prehistoric animal like *Gastornis*.

Title page: fossils of marine life from between 470 million and 360 million years ago

Table of Contents: Georges Cuvier (portrait, top left) defined the ways scientists decide how an extinct animal, such as *Megatherium* (top), might look. Geologist William Buckland (foreground, left) found a tiny mammal's jaw bone (under magnifying glass) with a dinosaur's toe bone, which led him and Cuvier to decide that mammals had lived in more ancient times than anyone had ever known.

Prehistoric Giants (Other Than Dinosaurs)
Level Y Leveled Reader
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Written by Alfred J. Smuskiewicz

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Correlation

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Fountas & Pinnell	U
Reading Recovery	28
DRA	N/A



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What Giants Lived Long Ago?

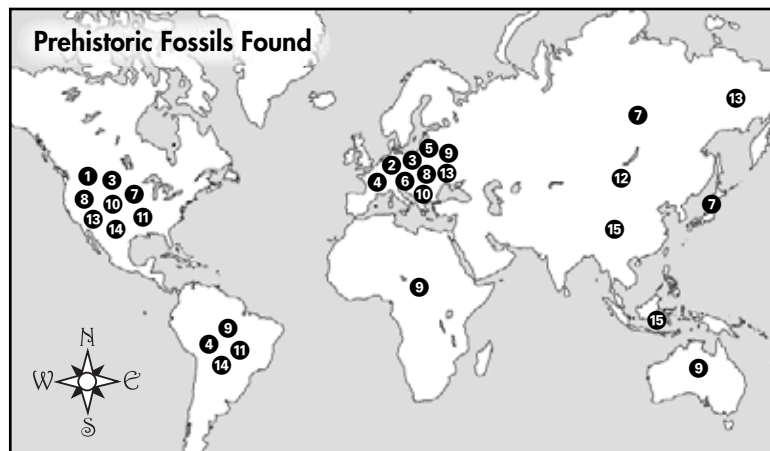
Imagine traveling in a time machine to walk through a forest millions of years ago. As you stroll along, you suddenly hear a loud snorting behind you. When you turn, you see a huge animal, bigger than a house! You may think at first that this giant is a dinosaur—but it might not be.

Many **prehistoric** animals other than dinosaurs were giants. There were other giant reptiles as well as giant **species** of shellfish, insects, centipedes, fish, **amphibians**, birds, and mammals. There was even a giant ape, almost like King Kong!

Scientists called **paleontologists** learn about prehistoric animals from shells, footprints, and fossils (remains or traces of animals, such as bones). Paleontologists can use a fossil to learn when and where an animal lived, how big it was, what kind of food it ate, and how it moved. Sometimes, paleontologists can even remove **DNA** from animal remains. Tests of this DNA can show how the prehistoric animal is related to animals living today.

Do You Know?

Species have changed over and over again throughout Earth's history, with old species becoming extinct (dying out) and new ones appearing. More than 99 percent of all animal species that have ever lived are now extinct.



- | | |
|---|---|
| ① Cameroceras : N. America | ⑨ Ornithocheirus : S. America, Europe, Africa, Australia |
| ② Meganeura : Europe | ⑩ Gastornis : N. America, Europe |
| ③ Arthropleura : N. America, Europe | ⑪ Phorusrhacos : N. and S. America |
| ④ Leedsichthys : France, Chile | ⑫ Indricotherium : Mongolia |
| ⑤ Koolasuchus : Europe | ⑬ Mammuthus : N. America, Europe, Siberia |
| ⑥ Liopleurodon : Europe | ⑭ Megatherium : N. and S. America |
| ⑦ Elasmosaurus : N. America, Russia, Japan | ⑮ Gigantopithecus : China, Southeast Asia |
| ⑧ Cymbospondylus : N. America, Europe | |

Scientists divide Earth's history into several different **periods** of time. These periods are grouped into different **eras**. The chart on page 7 shows in what periods and eras the animals in this book lived. As you read this book, pay special attention to parts that discuss causes and effects of various events, such as why a species disappeared during a certain period.

Enjoy your prehistoric journey with giants!

Giant Invertebrates

Set your time machine for the Paleozoic (pay-lee-ah-ZO-ik) era to see some giant **invertebrates** (animals without backbones). Some fly through the air, and others swim in the oceans, so don't forget to bring your swimsuit!

Cameroceras—Scariest Shellfish

It is 470 million to 440 million years ago, and all animals live in the ocean. What are you waiting for? Dive in to see *Cameroceras* (cam-



Do You Know?

People used to think the fossil shells of small relatives of *Cameroceras* were the horns of unicorns.

er-ah-SAIR-us), a giant squidlike shellfish. Its head and eight **tentacles** stick out of a cone-shaped shell, which might grow as long as 36 feet (11 m).

Cameroceras swims by forcing water out of its shell through a tube. The force of the water makes the animal move in the opposite direction. This is similar to a balloon releasing air and flying across the room.

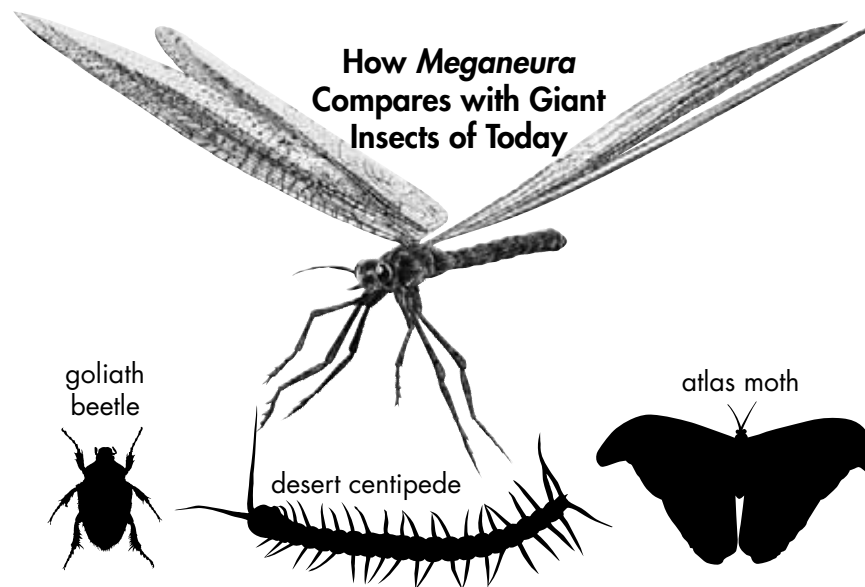
Cameroceras hunts **trilobites** (TRY-luh-bites) and other sea animals. It grabs these animals with its tentacles and uses its sharp beak to tear them to pieces.

Eras and Periods in Earth's History

Era	Period	When Period Began (years ago)	Animals in Period
Precambrian Time		4.5 billion	*
Paleozoic	Cambrian	543 million	 Cameroceras, page 6
	Ordovician	490 million	
	Silurian	443 million	
	Devonian	417 million	 Arthropleura, page 9 Meganeura, page 8
	Carboniferous	354 million	
	Permian	290 million	
Mesozoic	Triassic	248 million	Cymbospondylus, page 12
	Jurassic	206 million	Leedsichthys, page 10
	Cretaceous	144 million	Ornithocheirus, page 15
			Koolasuchus, page 11
			Elasmosaurus, page 14
Cenozoic	Tertiary	65 million	Gastornis, page 16
			Indricotherium, page 18
			Phorusrhacos, page 17
			Gigantopithecus, page 19
	Quaternary	2 million	Mammothus, page 20
		Today	Megatherium, page 21

* The first known animal appeared about 600 million years ago.

How *Meganeura* Compares with Giant Insects of Today



Meganeura—Dangerous Dragonfly

If you travel more than 100 million years after *Cameroceras* roamed the seas, you will probably end up in a swampy forest, about 311 million to 282 million years ago. And you might want to duck, because a giant dragonfly is swooping down through the tropical air. *Meganeura* (MEG-an-YOO-rah) is bigger than most birds you know. It has a wingspan of 2.5 feet (76 cm), making it the largest insect ever known.

You've probably noticed that the air is heavier than you're used to. That's because there's more oxygen in it. This heavy air helps support the weight of the giant flyer, and the extra oxygen allows *Meganeura* to grow to a giant size.

Arthropleura—Biggest Bug

Now that *Meganeura* has flown by, crawling toward you along the forest floor is *Arthropleura* (AHR-throw-PLOOR-ah), the largest land **arthropod** ever. But it isn't a six-legged insect. It is more like a 60-legged centipede, and it can grow longer than 8 feet (2.5 m). It lives in swampy forests between 340 million and 280 million years ago. Like *Meganeura*, *Arthropleura* grows so large because the air is heavy with oxygen.

Math Minute

How many legs did *Arthropleura* have?



The body of *Arthropleura* was made up of 30 hard plates. Under each plate was a pair of legs.

Giant Fish and Amphibians

The next giants you will visit on your journey through time are a fish and an amphibian who live during different periods of the Mesozoic (MEZ-uh-ZO-ik) era. You might want to bring your snorkel as you head out to sea.

Leedsichthys—Largest Fish

Leedsichthys (leeds-ICK-thees) is no “big fish that got away” story. It is real. The largest fish that ever lived, it can grow almost 90 feet (27.5 m) long in the seas of 165 million to 155 million years ago.

Leedsichthys gulps in huge mouthfuls of water as it swims. At the back of the fish's mouth are more than 40,000 long, thin teeth. These teeth

Do You Know?

In May 2005, fishermen in Thailand caught a Mekong River giant catfish almost 9 feet (2.7 m) long. Before scientists could study this giant fish, however, the fishermen and their friends ate it!

act like a screen to keep in shrimp, jellyfish, and other small animals when *Leedsichthys* blows the water back out. Many whales eat this way back in your time.

You know *Leedsichthys* will eventually become **extinct** because the animal doesn't exist in your time. The reason is possibly because seas become lower and smaller. Smaller seas will mean less food for the giant fish to eat.

Koolasuchus—Slimy Giant

Hit the fast-forward button in your time machine, skipping ahead between 40 million and 60 million years further into the Mesozoic Era. See that slimy giant salamander with the really wide, flat head? That's *Koolasuchus* (KOOL-ah-SOOK-us), an enormous amphibian, about 17 feet (5 m) long, that lives in swampy forests 137 million to 112 million years ago. Its big head holds more than 100 long teeth, which it uses to capture fish, crabs, turtles, and other prey.

Koolasuchus has eyes on top of its head. This allows it to bury itself in muddy water while keeping watch for prey. Crocodiles hunt in the same way.

Koolasuchus and other giant amphibians will disappear. A change in climate will cause them to become extinct. The change in climate will cause their swampy **habitat** to become less common.



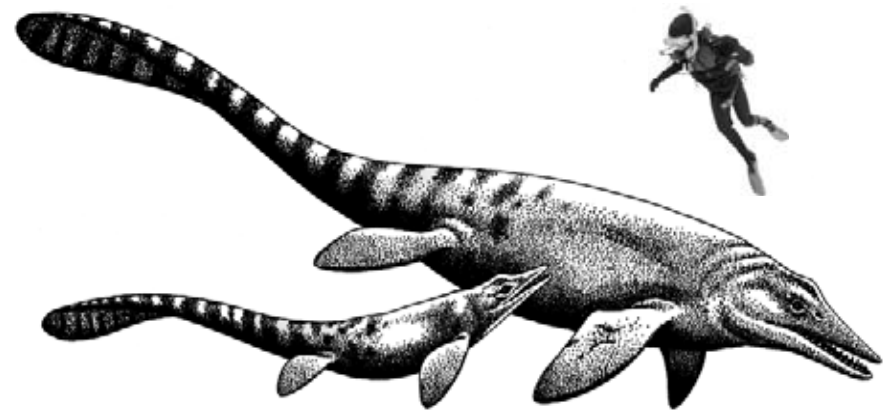
Giant Reptiles

During the Mesozoic, while dinosaurs walk the Earth, other giant reptiles swim in the ocean. They are just as gigantic as some dinosaurs. And just as deadly.

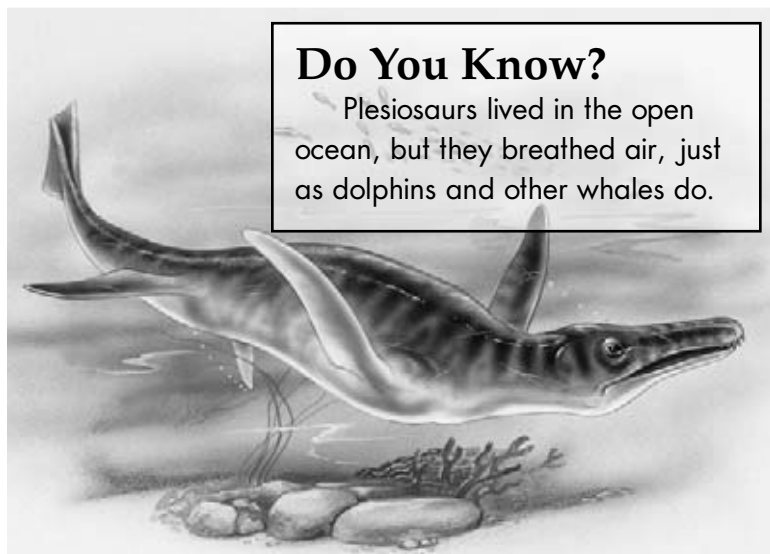
Cymbospondylus—Fishlike Reptile

Cymbospondylus (sim-bow-SPOND-ee-lus) belongs to a group of fishlike **marine** reptiles called ichthyosaurs (IK-thee-uh-sorz). It lives 240 million to 210 million years ago, when it is one of the largest animals in the sea, at 33 feet (10 m) long.

Cymbospondylus has a huge head with a long, pointed snout. Its jaw contains many rows of small teeth used for catching and holding fish and other animals that it hunts in deep waters.



Cymbospondylus had a huge head with a long, pointed snout. It hunted mostly small- and medium-sized fish and shellfish.



Liopleurodon—*T. rex* of the Seas

Travel forward from the time of *Cymbospondylus* but stay in the ocean—if you dare. The reptile *Liopleurodon* (LIE-oh-PLOOR-oh-don) swims in these salty waters, with a mouth about three times larger than that of the famous dinosaur *Tyrannosaurus rex* (tie-RAN-uh-SAW-russ rex). *Liopleurodon* can use its large, powerful jaws to kill any animal in the seas. Like a shark in your time, it can smell prey from a long distance away.

Part of a group of reptiles called plesiosaurs (PLEEZ-ee-uh-sorz), short-necked *Liopleurodon* lives 160 million to 155 million years ago. It can grow up to 49 feet (15 m) long.

Elasmosaurus—Long-Necked Hunter

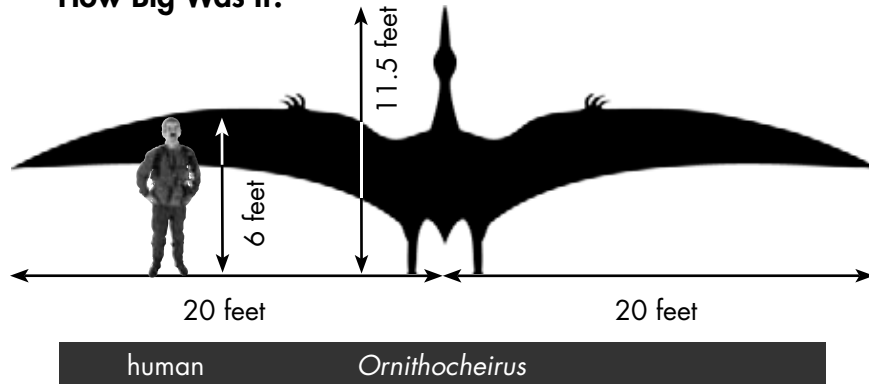
If you go swimming between 85 million and 65 million years ago, you might not even notice *Elasmosaurus* (eh-LAZ-mo-SAWR-us), even though it grows as long as 49 feet (15 m). Most of that length is in its neck and tail. This plesiosaur's long neck has 76 backbones in it. (The neck of a person has only eight backbones.)

Elasmosaurus can keep the bulk of its body far away from the fish it hunts. Its long neck allows it to sneak up under a school of fish without the fish knowing there is a giant under them!



Elasmosaurus swam with its long neck straight out. The reptile also had four diamond-shaped flippers.

How Big Was It?



Ornithocheirus—Flying Reptile

From out of the sky, a creature the size of a small airplane swoops down, dips its long beak below the water's surface, and swallows a fish whole before flying off again. A giant bird? No. You just witnessed *Ornithocheirus* (or-NITH-oh-KY-rus), a flying reptile that lives near sea coasts and lakes from 140 million to 70 million years ago. It may be the largest of the pterosaurs (TAIR-ah-sorz), which is a group of flying reptiles that live at the same time as the dinosaurs.

Ornithocheirus has a wingspan up to 40 feet (12.1 m) and a body about 11.5 feet (3.5 m) long. Although it is gigantic, it probably weighs only about as much as you do. That's because its bones are hollow, helping it to fly easily. Colonies of these giant flyers build nests on cliff tops.

Giant Birds

You won't need binoculars to spot the enormous creatures called terror birds. Like today's ostriches, they are flightless, but unlike plant-eating ostriches, most (and maybe all) terror birds are **predators**.

Gastornis—A Ton of Terror

In the forests and swamps of 56 million to 41 million years ago, you will find *Gastornis* (gas-TOR-niss), a bird about 7 feet (2.1 m) tall. It is possibly one of the top predators in North America and Europe since dinosaurs are extinct in its time.

Modern scientists are not sure what this terror bird eats, but you can see its sharp, powerful beak, which can easily rip the flesh and crush the bones of small animals—if it can catch them. *Gastornis* may weigh more than 1 ton (0.9 metric ton).



Gastornis might have eaten animals with its strong beak, but scientists don't know for sure.



Phorusrhacos had a short, sharp claw on each wing, though scientists do not know how it was used.

***Phorusrhacos*—Speedy and Deadly**

Phorusrhacos (FOR-uss-RAH-kuss) is a terror bird that stands up to 10 feet (3 m) tall. It hunts small animals in plains and woodlands from 27 million to 2.5 million years ago, possibly catching such prey as young saber-toothed cats and small horses.

Phorusrhacos can move much faster than *Gastornis* because it doesn't weigh as much as that earlier terror bird. *Phorusrhacos* may be able to run after its prey at 43 miles (69 km) per hour, faster than a car usually travels down a city street.

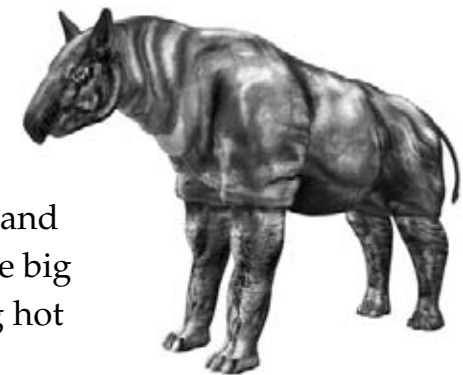
Giant Mammals

After the extinction of the giant reptiles, giant mammals began to rule the world. Many scientists believe terror birds went extinct later in the Cenozoic era because mammals were better hunters—they ate all the food! But the giant mammals you are about to meet are **herbivores**, meaning they eat only plants, so don't be afraid to get close.

***Indricotherium*—Dino-Sized Rhino**

Climb a tree to get a good look at *Indricotherium* (IN-drik-oh-THEER-ee-um), a relative of today's rhinoceros. This giant mammal uses its long neck, like a giraffe, to eat leaves and branches at the tops of trees.

Living from 30 million to 25 million years ago, *Indricotherium* is at least 15 feet (4.5 m) tall—bigger than a one-story house—and it weighs 16 tons (15 metric tons). The big body of *Indricotherium* allows it to store a great amount of fat and water. This helps the big animal survive long hot and dry seasons.



One of the earliest and largest land mammals

***Gigantopithecus*—The Real King Kong**

King Kong was a big ape in a movie, but *Gigantopithecus* (jeye-GANT-o-PIH-thuh-kuhs) is a real giant ape that lives from about 8 million to 100,000 years ago. Some males stand 10 feet (3 m) tall on their hind legs and weigh more than 1,000 pounds (454 kilograms). You can tell which ones are females. They are half this size.

Gigantopithecus is a gentle giant. It eats bamboo, fruit, seeds, and other plant food in tropical rainforests in Asia.

While you're here, you might even spot an early type of human called *Homo erectus*, who is living at the same time and in the same places as *Gigantopithecus*.

These humans may end up using so much bamboo for food and to make tools that not enough will be left for *Gigantopithecus* to eat. This is one possible reason why *Gigantopithecus* will become extinct.

Do You Know?

Could *Gigantopithecus* still be alive? Hundreds of people have claimed to see a huge, hairy apelike creature in the northwestern United States and in Canada. Because of the 16-inch (41-cm) footprints that have been seen in these areas, this creature is called Bigfoot. In Asia, many people have seen a similar creature, which is called Yeti. Most scientists doubt these creatures really exist.



An African elephant (left) stands with the woolly mammoth and three of their closely related ancestors. How are they different from each other?

***Mammuthus*—Woolly Mammoth and Its Relatives**

Time to move forward again to between 4 million and 10,000 years ago, during the last **ice age**, to catch a glimpse of a woolly mammoth, a species of *Mammuthus* (MAM-oo-thuss). Keep your eyes peeled for a creature that looks like a huge hairy elephant, with long curved tusks. There it is, using its tusks to clear paths through snow, probably searching for plant food. The woolly mammoth stands almost 12 feet (3.6 m) tall, but another *Mammuthus* species can grow as tall as 14 feet (4.3 m).

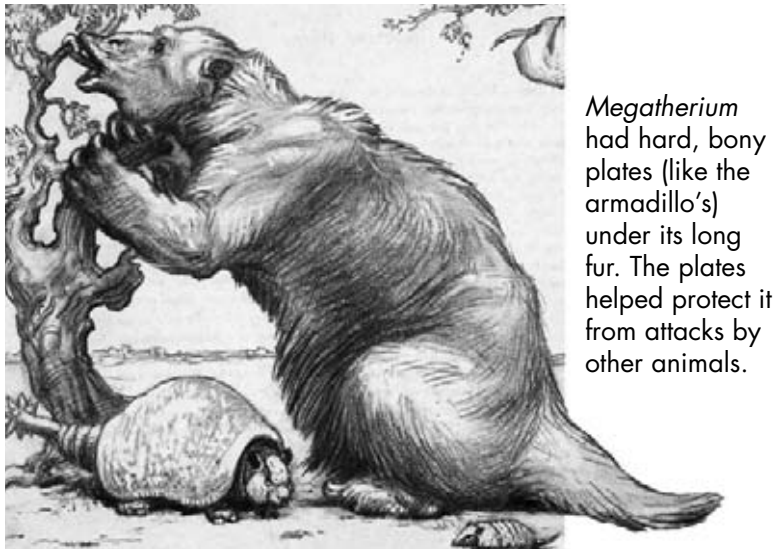
Early humans hunt mammoths and paint pictures of them, which can still be seen on cave walls in modern Europe. Mammoths will become extinct at the end of the ice age, when the weather becomes too warm for them.

Megatherium—Giant Ground Sloth

Don't take off your winter coat yet. Another huge mammal that lives during the last ice age is *Megatherium* (meg-ah-THEER-ee-um), a giant ground sloth. It lives about 2 million to 8,000 years ago and is almost 20 feet (6 m) long.

Megatherium is related to the much smaller tree sloths that live in South America today. The one you're watching is standing on its hind legs, using its tail for balance, which shouldn't surprise you. Fossil footprints found in your time showed that it could stand and even walk upright.

And speaking of your time, you should probably be getting back . . .

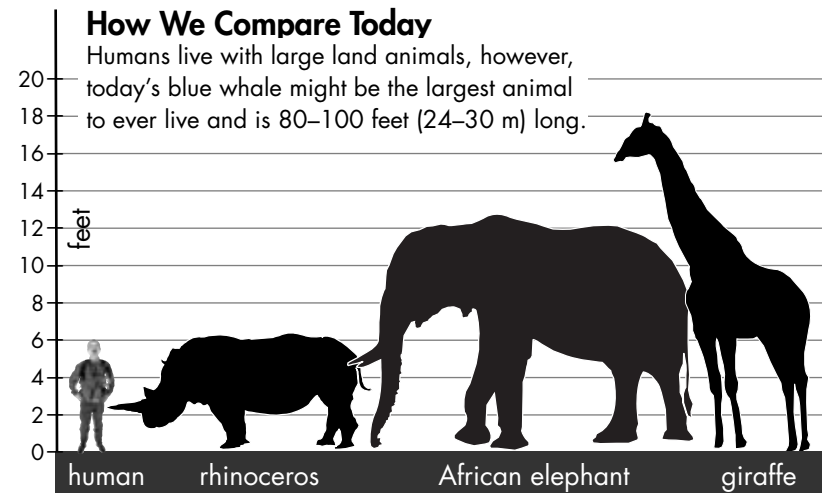


Megatherium had hard, bony plates (like the armadillo's) under its long fur. The plates helped protect it from attacks by other animals.

A World Without Giants?

Isn't it amazing to think that giants such as the ones in this book once walked on Earth and swam in the ocean? It's too bad we can't see these huge creatures today.

However, you don't have to get in a time machine to see very large animals. Blue whales, great white sharks, giant squids, grizzly bears, elephants, giraffes, ostriches, condors, and anacondas are some of the large animals that share the planet with us today. Unfortunately, many of these animals are threatened with extinction because their populations are so small. It's important to protect these animals, mainly by preserving their habitats. That way, we can be sure that we'll never live in a world without giants.



Glossary

amphibians (<i>n.</i>)	animals that live part of their lives in water and part on land (p. 4)
arthropod (<i>n.</i>)	any animal whose body has a hard covering and jointed legs, including insects, crabs, lobsters, spiders, and centipedes (p. 9)
DNA deoxyribonucleic acid (<i>n.</i>)	a chemical in cells that has instructions for the formation and growth of new cells and new organisms (Closely related organisms have similar DNA.) (p. 4)
eras (<i>n.</i>)	large divisions of time in Earth's history: Paleozoic, Mesozoic, and Cenozoic (p. 5)
extinct (<i>adj.</i>)	no longer living (p. 10)
habitat (<i>n.</i>)	the kind of place where a plant or animal lives in nature (p. 11)
herbivores (<i>n.</i>)	animals that eat only plants (p. 18)
ice age (<i>n.</i>)	a period in Earth's history when ice sheets covered large areas of land (p. 20)
invertebrates (<i>n.</i>)	animals that do not have backbones (p. 6)
marine (<i>adj.</i>)	of or relating to the sea (the ocean) (p. 12)
paleontologists (<i>n.</i>)	scientists who study fossils to learn about animals and plants that lived long ago (p. 4)
periods (<i>n.</i>)	divisions of time—such as Permian, Jurassic, and Tertiary—that make up larger eras of time in Earth's history (p. 5)
predators (<i>n.</i>)	animals that hunt and eat other animals (p. 16)
prehistoric (<i>adj.</i>)	of or relating to the time before writing was invented, about 6,000 years ago (p. 4)
species (<i>n.</i>)	a group of organisms (such as plants or animals) that have most things in common and can make new organisms of the same kind (p. 4)

tentacles (<i>n.</i>)	long, flexible armlike growths on an animal that the animal uses to feel things, to hold things, or to move (p. 6)
trilobites (<i>n.</i>)	common prehistoric sea animals that were covered with a soft shell (p. 6)

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Name _____

Instructions: In the first row, write what you already know about prehistoric giants. In the second row, write what you would like to learn about them. After you finish reading, fill in the third row with information you learned from reading the book and the fourth row with what you still want to know.

K: What I Know
W: What I Want to Know
L: What I Learned
S: What I Still Want to Know

Name _____

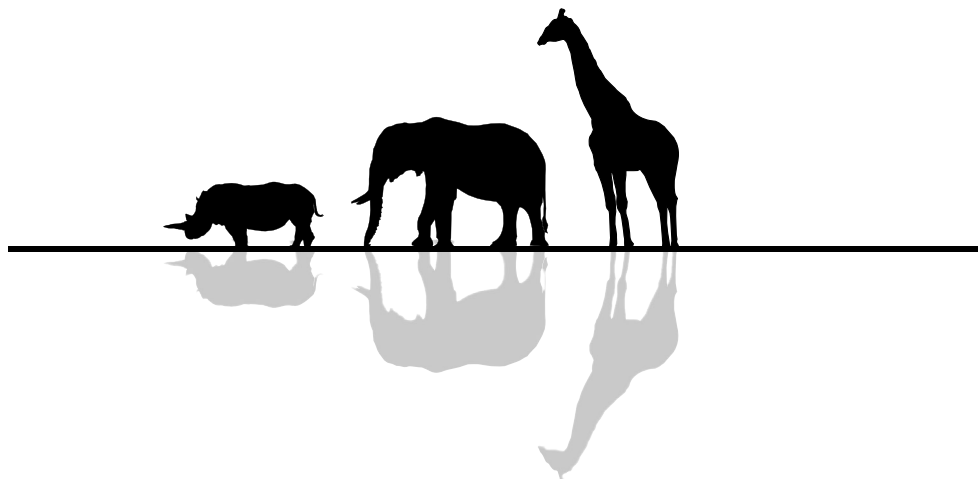
Instructions: In the left-hand boxes, write the main idea of each of the sections. In the right-hand boxes, list up to three details that support each main idea.

Book Title:		
Section 5	Main Idea	Details 1. 2. 3.
Section 6	Main Idea	Details 1. 2. 3.
Section 7	Main Idea	Details 1. 2. 3.
Section 8	Main Idea	Details 1. 2. 3.

Name _____

Instructions: Read the sentences below and add commas to separate the words or phrases in a list.

- ❶ There were other giant reptiles as well as giant species of shellfish insects centipedes fish amphibians birds and mammals.
- ❷ Paleontologists learn about prehistoric animals from shells footprints and fossils.
- ❸ Paleontologists can use a fossil to learn when and where an animal lived how big it was what kind of food it ate and how it moved.
- ❹ These teeth act like a screen to keep in shrimp jellyfish and other small animals when Leedsichthys blows the water back out.
- ❺ Its big head holds more than 100 long teeth, which it uses to capture fish crabs turtles and other prey.
- ❻ A creature the size of a small airplane swoops down dips its long beak below the water's surface and swallows a fish whole before flying off again.
- ❼ It eats bamboo fruit seeds and other plant food in tropical rainforests in Asia.
- ❽ Blue whales great white sharks giant squids grizzly bears elephants giraffes ostriches condors and anacondas are some of the large animals that share the planet with us today.



Name _____

Instructions: Fill in the blanks to complete the sentence for each pronunciation given in *Prehistoric Giants (Other Than Dinosaurs)*. You can refer to your book for the spellings.

① (pay-lee-ah-ZO-ik)

The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ syllable.

② (cam-er-ah-SAIR-us)

The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ syllable.

③ (AHR-throw-PLOOR-ah)

The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ and _____ syllables.

④ (sim-bow-SPOND-ee-lus)

The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ syllable.

⑤ (IK-thee-uh-sorz)

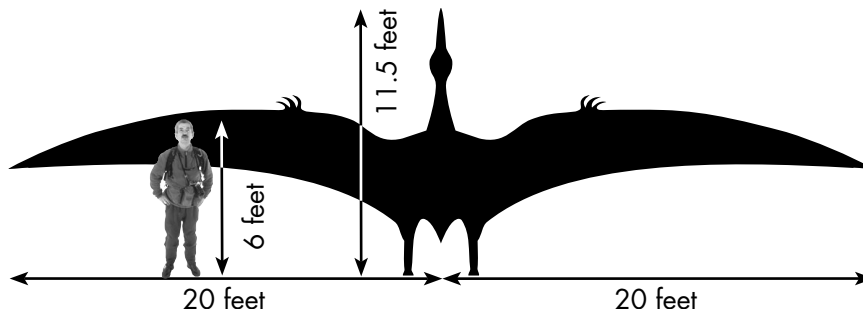
The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ syllable.

⑥ (LIE-oh-PLOOR-oh-don)

The word is spelled _____ and has _____ syllables.

The emphasis is on the _____ and _____ syllables.



man

Ornithocheirus

Arrows

A Reading A-Z Level Y Leveled Reader

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ARROWS



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Page 7: courtesy of the William Hammond Mathers Museum, Indiana University

The photograph on page 7 shows the Choctaw Telephone Squad at Camp Merritt, New Jersey, on June 7, 1919.

From right to left : Captain E.H. Horner (Commanding)

Private James Davenport, Choctaw, age 27

Corporal James Edwards, Choctaw, age 20

Corporal Calvin Wilson, Choctaw, age 24

Private Mitchell Bobbs, Choctaw, age 25

Corporal Taylor Lewis, Choctaw, age 22

Arrows

Level Y Leveled Reader

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THE FIRST ARROW

Poloma was flinging her new ball high into the air when she made her unexpected discovery of the first arrow in the forest. That particular Mississippi morning, she was aiming for the Sun, launching the ball higher and higher, when it came down and bounced away. The fast-moving ball careened off a tree trunk and ricocheted off a log, eventually coming to rest near a large, moss-covered boulder.

While disentangling the ball from the matted tendrils of undergrowth, Poloma noticed the mysterious arrow carved into the lower part of the massive rock.





The arrow looked like a simple carving, but almost immediately Poloma realized she'd made a significant discovery. She scooped up her ball and scampered home to where her grandfather rested on the porch. His eyes appeared closed, and for a moment she wondered if she should disturb him with the news.

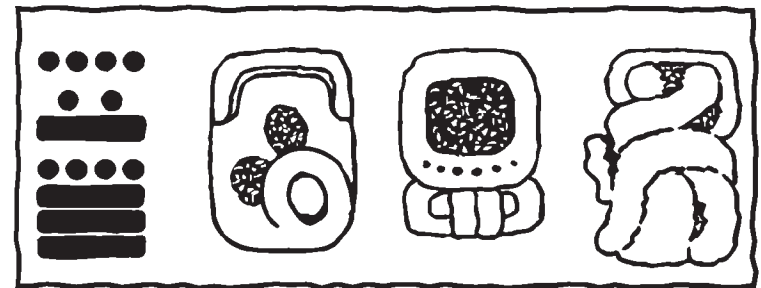
"You've discovered something special," he said softly, stretching awake, while his granddaughter took a seat on the swing next to him. "You're absolutely fidgeting with excitement."

"I've found an arrow, Papa!" Poloma enthusiastically kicked her feet, sending the swing swaying back and forth like a pendulum, making a gentle rhythmic sound.

"And where is this amazing arrow that excites you so much?"

Poloma told her grandfather about the bouncing ball, the boulder, and the arrow that was carved near the base of the rock.

"Do you think the arrow is a **glyph** like the ones in my code books?" Poloma asked. "Maybe it's a Mayan hieroglyphic; the Mayans used tiny pictures instead of words and letters. Maybe the Mayans carved the arrow," Poloma guessed.



Papa pulled himself out of the swing and smiled down at his granddaughter. "That's an extremely good question," he said, "but I doubt that the Mayans carved rocks around here because the Mayans lived hundreds of miles south of here in Mexico and Central America. However, your arrow might indeed represent some strange code, but before we jump to any **irrational** conclusions, let's conduct a little research to find out."

Poloma's grandfather knew about codes; in fact, he was a **veteran** who had been **decorated** for his work with **cryptography** during World War II. Papa and other Native American **Code Talkers** had helped the United States and its allies win the war by sending secret messages.

"Will you tell me again, Papa?" Poloma pleaded. She loved to hear the Code Talker story, even though she'd heard it many times before. She especially enjoyed hearing about the **Mississippi Choctaw** Code Talkers like her grandfather.

"Come," her grandfather said, as he took her hand, "I think we should visit your puzzling arrow, and I'll tell you about the Code Talkers as we walk through the woods."



This group of Oklahoma Choctaw soldiers from World War I paved the way for other native languages to be used as codes in World War II.

As they made their way toward the boulder, Papa **recounted** the story of the Code Talkers and how they had sent messages that no one else could **interpret**.

QUESTIONS

"We spoke into walkie-talkie radios," he explained, "and we only used Choctaw words that would be **unintelligible** to outsiders. The Code Talker on the other end received my message and **translated** it into English for Allied soldiers. If enemies were listening, they wouldn't be able to **comprehend** any words whatsoever."



Poloma and her grandfather were at the boulder now. They knelt down, and Poloma pointed to the roughly carved arrow. Wind and rain had eroded the arrow's edges so that it was nearly invisible to anyone who was not carefully examining the stone.

"What do you think it means?" she asked.

Papa traced his finger back and forth over the carving. "I can't say for certain," he said. "It's a very old carving, but it's hard to estimate how old. It's a difficult and complicated process to determine how old a carving is."

"How do people know?" Poloma asked.

"Well, there are many ways. Remember the cave paintings we saw last summer, and the ancient fossils and bones we saw at the natural history museum? Scientists use a method called **carbon dating** to figure out how old those things are."

"Can we use it to find out how old our arrow is?" Poloma asked.

"Possibly—someone could date the plants in the cracks nearest to the carving," Papa told her. "But let's try an alternative method. Let's study the arrow and its environment for more clues."

Poloma peered at the arrow for a long time. Suddenly, she had an idea.

"I know!" she shouted. "Maybe we should explore where the arrow is pointing?"

The arrow was pointing toward another boulder nearby. Poloma and Papa followed it and found the second arrow almost immediately. The second arrow was pointing in the same direction as the first so they followed that one, too. It led to another boulder, and another arrow, which led to yet another, and then another arrow.

There were six arrows in all.





"What do you think it means, Papa?" Poloma asked as she ran her finger over the sixth arrow.

"I think it means we should look for the next arrow," Papa laughed. "The arrows are sending us somewhere for some inexplicable reason, and I'm champing at the bit to see where and why."

They continued on in the direction the arrows had been leading them but saw no more boulders. The arrows led them abruptly toward a stream.

"What should we do?" Poloma asked.

"I suppose we should cross the stream. It looks very shallow, so if we tiptoe from stone to stone, perhaps we'll find another arrow on the other side. Hold my hand tight; we'll cross together."



ANSWERS

They crossed the stream, holding hands, stepping carefully. When they reached the other side, they nearly toppled over the next boulder. It was almost entirely obscured by a grove of old pine trees at the top of an **embankment**.

"Do you think there's anything carved on it?" Poloma asked.

"Let's take a look," Papa said.

They knelt down together, side by side, and examined the boulder. At first they couldn't find an arrow or any other carving, and they were about to give up when Poloma screeched.

"I found something! I found something!" she shouted as she leaned closer to the boulder and scraped off some dried and shriveled moss with her fingers. "Look, Papa! It's not an arrow at all—there's a bunch of letters carved into the bottom of the boulder! I wonder if we can make them out."

"I'm afraid you'll have to read them to me," Papa stood up slowly, rubbing his knees. "Glaucoma and rheumatism aren't the best assets for would-be explorers. I'll never be able to read those tiny marks with my poor eyesight, and my joints are aching from all this crawling around in the brush."

Poloma crawled closer to the boulder and **pored** over the letters. It took her a long time, but she was finally able to read them all.

"They don't make sense as words from any language I've ever seen," she said. "I'll say them to you, but it looks like **gibberish** to me."

Poloma read each letter out loud, very slowly.

g p m m p x u i f e s j o l j o h h p v s e

When she was finished, she said, "Maybe they're a code. Do you think they could be a code, Papa?"



"Read them again," Papa said. "Maybe I can make some sense of them if you read them again."

Poloma said the series of letters again. As she recited them, she could hear her grandfather's footsteps. He was anxiously walking with a measured gait through the dead leaves and pine needles. Papa always paced when he had something important to mull over.

"Do they mean anything to you?" she asked when she was done.

"I'm not exactly sure," Papa told her. "But I think it's a cipher, and I think I recognize it."

Poloma knew what a cipher was. It was a code that substituted letters or numbers for the real letters in a message.

"Ciphers like that one have been used in many wars to conceal **strategic** information from the enemy," Papa explained.

"Reading a message created with a cipher is easy if you know the key to the code."



CRACKING THE CODE

"Did you use a cipher in the war?" Poloma asked.

"We used a kind of cipher, substituting Choctaw names of things found in nature for military equipment like tanks and machine guns. I also heard about some very complicated **cryptograms** used in World War II. The Germans had a very sophisticated device called the Enigma Machine that was a kind of mechanical computer that substituted letters for other letters. But the first substitution cipher was invented by the Roman emperor Julius Caesar more than 2,000 years ago."

"I wonder if these letters were used in a war, too," Poloma pondered.

Papa **contemplated** that. He paced for a very long time, and then he halted beside his granddaughter and cleared his throat.

"I think I remember something," he said. "As you may recall, a great war took place right around here."

"The Civil War—right, Papa?" Poloma asked.



"Yes. About 150 years ago, the Civil War was fought to free the slaves in the South. I think I recall reading that the soldiers and spies in the North used a special cipher."

"Do you remember what it was, Papa?"

"It was similar to the Caesar Cipher. Read me the letters again."

Poloma read the letters slowly.

g p m m p x u i f e s j o l j o h h p v s e

Papa shook his head and placed a gentle hand on his granddaughter's shoulder.

"You forgot the spaces," he said. "Read the letters again, and don't forget the spaces between the words."

Poloma read the letters again. This time she was careful to pause whenever she saw a space.

g p m m p x u i f e s j o l j o h h p v s e

As she was repeating the letters she remembered something that she had noticed in codes she had **deciphered** before. Most sentences contained at least one short common word, and this one was no exception.

"I think I see some interesting patterns of letters," she said. "Let's say the letters combine to form words. One of the words has three letters. Let's assume that it's a common word . . ."

". . . like *and*?"

"Or *the*," Poloma suggested. "There has to be one common word in a sentence."

Poloma and Papa were quiet for several minutes as they considered the three letters.

"I don't think it's *and*," Papa said. "The letters don't make sense."

"But it could be *the*," Poloma said. "Maybe the letters *uif* stand for *the* in some way."

Papa was smiling now. "You are a brilliant girl," he said. "What letter precedes *u* in the alphabet?"

"T," Poloma said. "And the letter *h* comes before *i*, and the letter *e* comes before *f*. This is a substitute-letter cipher, Papa!"

"Yes! I remember now! During the Civil War, some Northern spies and soldiers used a code called the advance cipher. They advanced each letter one letter of the alphabet."



THE DRINKING GOURD

Once they had cracked the code, it was easy to read the message.

"I know what it says, Papa. It says, 'Follow the Drinking Gourd.' But I don't know what the message means. Do you know what it means?"

Papa was pacing again now, and Poloma could tell that he was meditating on the **significance** of what they had found.

"Before the end of the war," he said, "many slaves longed to escape to freedom in the North. They followed what was called the Underground Railroad, which wasn't literally a railroad but instead was a series of routes and directions and safe houses that led the slaves northward. Some slaves who had escaped returned to help other slaves."

"But who carved the arrows, Papa?"

"I'm not sure if we'll ever know that," Papa said. "It might have been a Northern spy trying to help. It might have been a returning slave who had learned the cipher in the North. Or maybe it had nothing to do with the war. Who knows? Maybe some children were playing a game."

"Did escaping slaves ever carve directions in trees or rocks?" Poloma asked.

"I've never heard of such an occurrence, but every day people uncover new information about the Underground Railroad. Just recently, someone discovered a hidden tunnel and a secret room in a house in Iowa where slaves hid out on their journey north to Canada. Many escaping slaves traveled all the way north to Canada after the Fugitive Slave Act of 1850 made it more difficult for them to find freedom in the northern United States."

"What does 'Follow the Drinking Gourd' mean?" Poloma asked.

"The Drinking Gourd is the constellation of seven stars now called the Big Dipper, which can always be found in the northern sky of the United States. Slaves followed the Drinking Gourd from safe house to safe house, until they finally reached freedom."

The Sun was beginning to set, and tiny slivers of light were flickering through the branches. Poloma took her flashlight from her backpack, turned it on, and took her grandfather's hand.

By the time they were back on the other side of the stream, the Sun had disappeared. Poloma stopped and scanned the sky.

"Are you looking for the Drinking Gourd?" her grandfather asked.

"There it is!"
Poloma was pointing to the bright cluster of stars in the sky.
"Shall we follow it?"

"It's your decision. Are we heading north?"



Poloma thought about that for a moment. The Drinking Gourd would lead them back across the stream, past the boulder with the cipher, and on to places north.

"We need to go south, Papa."

Poloma and Papa turned. They moved slowly, like creeping night creatures. The light from Poloma's flashlight led them away from the North Star, past the arrows pointing the other way, out of the woods, and home.

GLOSSARY

carbon	a test to determine age that analyzes
dating (<i>n.</i>)	the content of carbon, an element in organic material (p. 9)
Code Talkers (<i>n.</i>)	members of Native American tribes who used their native languages as codes during World Wars I and II (p. 7)
comprehend (<i>v.</i>)	understand fully (p. 8)
contemplated (<i>v.</i>)	thought over deeply (p. 16)
cryptograms (<i>n.</i>)	coded messages (p. 16)
cryptography (<i>n.</i>)	secret writing using a cipher or code (p. 7)
deciphered (<i>v.</i>)	worked out the meaning of a secret message or writing (p. 18)
decorated (<i>v.</i>)	awarded medals for performing well in the military (p. 7)
embankment (<i>n.</i>)	a raised section of earth, often bordering a body of water or a road (p. 12)
gibberish (<i>n.</i>)	a language that has no meaning or makes no sense (p. 13)
glyph (<i>n.</i>)	a picture or other character with special meaning that is often carved into something (p. 6)

interpret (<i>v.</i>)	tell or explain the meaning or significance of something (p. 8)
irrational (<i>adj.</i>)	not making logical sense (p. 6)
Mississippi Choctaw (<i>n.</i>)	a Native American tribe rich in history, that traditionally has lived in present-day Mississippi (p. 7)
pored (<i>v.</i>)	read with great attention (p. 13)
recounted (<i>v.</i>)	told again; repeated (p. 8)
significance (<i>n.</i>)	the importance or special meaning of somethings (p. 20)
strategic (<i>adj.</i>)	relating to a plan for winning something or solving a problem (p. 15)
translate (<i>v.</i>)	to take something written or spoken in one language and change it to another language (p. 8)
unintelligible (<i>adj.</i>)	not capable of being understood (p. 8)
veteran (<i>n.</i>)	a person who has served in the military (p. 7)

Name _____

INSTRUCTIONS: As you read Chapter 2 in *Arrows*, identify the important information by answering the questions in the chart. Record the information in the spaces below. Then use the information you've collected to write a short summary.

Who?	
What?	
When?	
Where?	
Why?	

ARROWS • LEVEL Y • 1

← Summary →

SKILL: SUMMARIZE

Name _____

INSTRUCTIONS: Read the pronouns in the word box. Then read each sentence. Replace the underlined word or words in each sentence with a pronoun from the word box. Write the new sentence on the line.

him	her	they	it
she	he	it	we

ARROWS • LEVEL Y • 2

1. Grandfather won a medal for his code work during the war.

2. The carving was very old.

3. Grandfather looked at Poloma and smiled.

4. Do you think there's anything carved on the rock?

5. Poloma and her grandfather were both interested in ciphers.

6. She asked her grandfather about the Civil War.

7. Grandpa and I solved the cipher together.

8. Poloma was proud of her discovery.

SKILL: PRONOUNS

Name _____

INSTRUCTIONS: Read each sentence below. Using a thesaurus, find two synonyms for the underlined word in each sentence. Write the synonyms in the box next to each sentence. Then choose one synonym to rewrite the sentence on the line provided.

1.

Poloma found an arrow carved in a big rock.

2.

Grandfather paced when he had an important matter to think about.

3.

Poloma asked good questions to learn more about codes.

4.

Grandfather told interesting stories about Code Talkers.

5.

Poloma and Grandfather were excited when they deciphered the code.

Gems: Treasures from the Earth

A Reading A-Z Level Y Leveled Reader

Word Count: 2,097



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Introduction

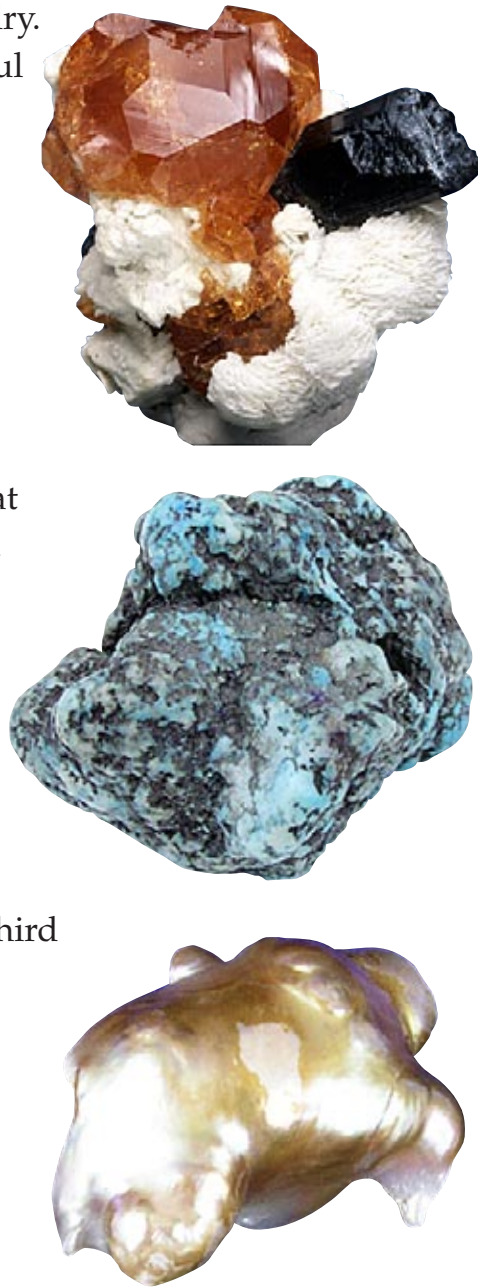
Many people consider gems to be Earth's most beautiful creations. They are willing to spend thousands of dollars for even a small bit of that beauty. Sparkling gems are worn on the fingers, necks, and wrists of people around the world. Families pass them down through generations. They can be found on crowns worn by royalty and on sacred religious objects.



Many gems decorate the most beautiful and valuable jewelry.

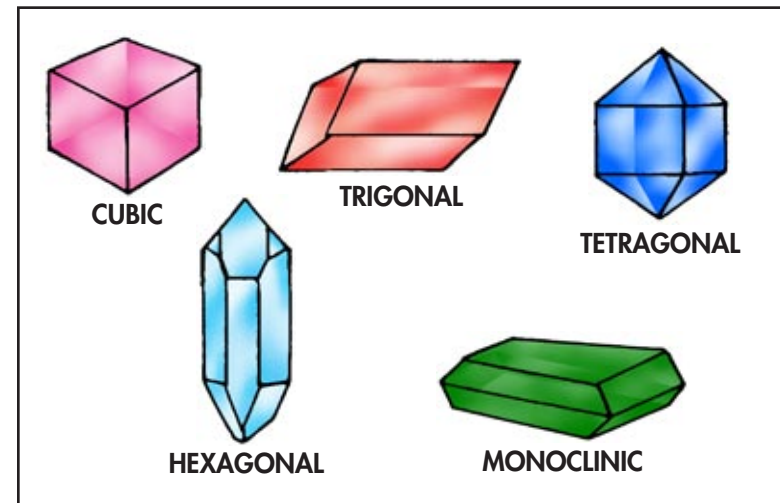
A gem is any beautiful stone that can be used in jewelry. Most gems have beautiful colors or sparkle, and they are hard enough to hold up to daily wear. There are three major types of gems. The first two, **crystals** and **stones**, are made of minerals—the natural, nonliving substances that make up ordinary rocks. Crystals are very pure minerals that form in tight shapes and neat patterns. Stones are mixed minerals that have beautiful colors and patterns, but do not have strict shapes. The third group, **organic gems**, comes from substances made by living things.

Garnet, a crystal (top);
turquoise, a stone (center);
natural pearl, an organic
gem (bottom)

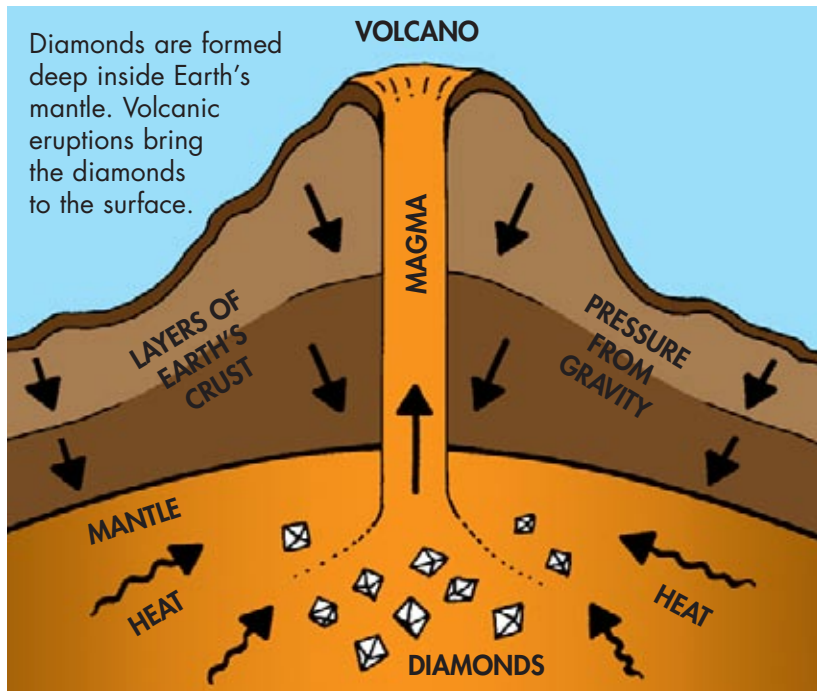


How Are Gems Formed?

Some of the most famous and expensive gems, including diamonds, emeralds, and rubies, are crystals. Crystals are very pure forms of minerals. Every mineral is made of millions of particles called **atoms**, which are so small they are invisible to the naked eye. In ordinary rocks, many kinds of atoms are thrown loosely together without any kind of pattern or order. But in crystals, the atoms are arranged very precisely in neat, orderly patterns. Crystals have flat sides, called faces, which form shapes. Different kinds of crystals form in different shapes, some of which are shown below. Some crystals form cubes, while others form long, six-sided columns.



Samples of Crystal Shapes



Most crystals form deep within the earth under very special conditions. Some, like diamonds, form when the mineral is squeezed under layers of rocks. The squeezing forces the atoms to arrange themselves until they are in the smallest shape possible. Others, such as sapphires, form when a mineral gets so hot inside the earth that it melts. As it slowly cools, the atoms fall into place to make a regular crystal pattern. And still other gems, such as opals, form when minerals dissolve in water. As the water evaporates very slowly, the mineral left behind forms a crystal.

Try This

Make your own crystals!

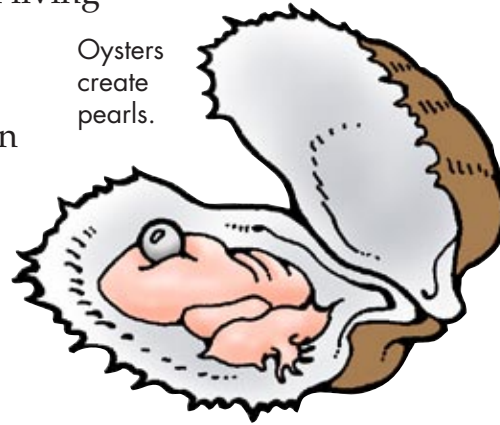


Rock salt, also known as halite, forms when salty seas evaporate. You can watch a much smaller version of this same process using just water and ordinary salt.

- 1 Mix a tablespoon of salt into a cup of warm water. Stir it until it dissolves.
- 2 Keep adding salt, a little at a time, until no more salt will dissolve.
- 3 Put a clean toothpick in the water.
- 4 Place the cup somewhere warm in the Sun. As the water evaporates, crystals will form on the toothpick and the sides of the cup.
- 5 Look at the crystals under a magnifying glass. What do they look like?

The minerals in stones do not form orderly patterns, and they may have other minerals mixed in. Stones often form in layers that make streaks and lines, called the **grain**. Grain gives stones beautiful patterns and surfaces.

Organic gems, which include pearls, amber, and coral, come from living things. Pearls begin when a grain of sand gets trapped inside an oyster's shell. The oyster covers the grain with layers of smooth **nacre**, the material it uses to build its shell.



Coral is made of skeletons left behind by millions of tiny sea creatures called coral **polyps**. Amber began millions of years ago when sticky sap oozed from trees and hardened. Amber often contains the fossils of insects and spiders that got caught in the sap.



A spider in amber

How Do Gems Get into Jewelry?

Most mineral gems are found deep within the earth. Humans must dig mines to get them. Because gems are so small and rare, mining is often still done by hand. Miners must chip and cut at the rock, looking for individual stones

embedded within it.

It takes a lot of work to find gems, and work costs money. The rarer the gem and the harder it is to find, the more valuable it is.



Opal mines are simple holes in the ground.

Do You Know?

Opals form when mineral-rich water evaporates from cracks underground. This leaves a streak of mineral crystal in the rock. Streaks of crystal are called veins. The best opals in the world are found in veins under the ground in the Australian desert town of Coober Pedy. In the Australian Aborigine language, "Coober Pedy" means "white man in a hole."

When a miner finds a gem, it looks very different from the one you see in a ring or necklace. The gem often has rough edges. Its surface looks dull. Its shape is bumpy. Gems often have cracks, dark marks, bubbles, and other flaws. Gem cutters, called **lapidaries**, cut gems into regular shapes that show off their best qualities and cover their flaws. Gem cutters once used diamond-edged saws and polishers, but recently they began using lasers to cut gems.

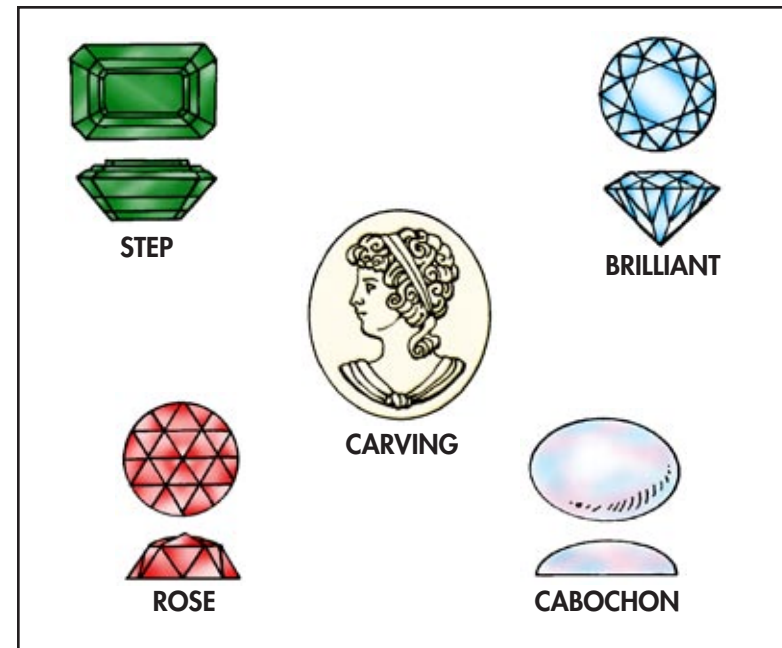


An uncut diamond looks uneven and flawed.

Most crystal gems are cut into flat surfaces called **facets**. Facets show off the gem's color and pattern, and allow it to sparkle with reflected light. Lapidaries cut different gems using several different cutting styles.



A cut diamond reflects lots of sparkle.



Cutting styles (top and side views) show gems' best features.

The popular brilliant-cut style is often used with diamonds, which have more sparkle than color. This style has many facets that reflect light off the gem. Deep green emeralds, in contrast, are often cut into a style called the step cut. This cut, with its rectangular facets, creates a wide, flat top of pure color. The rounded top and triangular facets of another style, the rose cut, are most often found on older gems. The oldest style of cut, the cabochon (KAB-oh-shon), is simply rounded and polished. It is most often used with **opaque** or patterned stones. Other gems, such as jade and coral, can be carved into small sculptures.

What Makes Gems Valuable?

Gems as a whole are valuable for two reasons: they are beautiful and they are rare. The prices of gems **fluctuate** over time. Certain gemstones have been regarded as “precious” throughout the ages and in many cultures. For example, although diamonds have always been regarded as valuable, their value has dramatically increased in the last century. This increase has occurred even though the supply of diamonds has grown substantially during the same period of time as a result of several large finds in South Africa. Diamonds have become more valuable in the last century partly because of the increasing popularity of diamond engagement rings around the world. Higher prices are also a result of global marketing efforts by companies that sell diamonds.

The value of an individual gem is determined by the gem’s hardness and a system called the “four Cs”: cut, carat weight, color, and clarity. Cut refers to how well the gem is cut and polished, or how beautiful the natural gem is. A poorly cut gem may look dull or uneven. Carat weight is the size of the stone. One carat weighs about as much as a kernel of unpopped popcorn.

The next of the four Cs, color, is one of the major reasons why gems are considered beautiful. Unlike regular rocks, gems have bright, pure, intense colors. The stronger and purer the color, the more valuable the gem is. Often, the same mineral can form different-colored gems. Red rubies and blue sapphires both contain the same mineral. The different colors come from tiny bits of other chemicals mixed with the main mineral. It only takes one different atom in a thousand to change the color of a gem.

Clarity refers to how flawless the gem is. Gems with dark marks, cracks, and bubbles are less valuable than gems without these flaws. Gems that are cloudy are also less valuable than clearer gems. But clarity is often not as important as the size and rarity of a gem. Emeralds often have many flaws, but because they are so rare, a flawed emerald is more valuable than a flawless diamond.



This uncut emerald shows many cracks and other flaws.

Hardness and the Mohs Scale

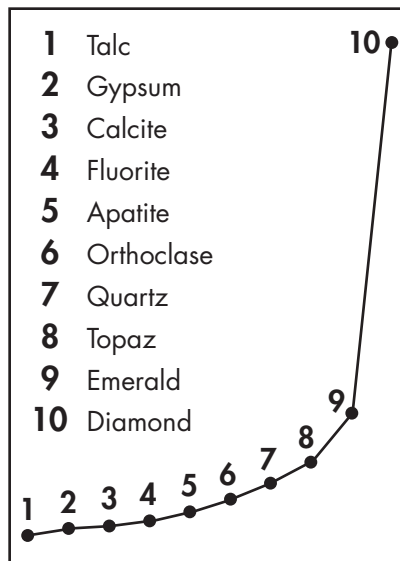
Hardness indicates how pure and tightly structured the mineral is in a gemstone. It tells how well a gem will hold up to daily wear. A geologist named Friedrich Mohs developed a scale to test the hardness of gemstones. He simply scratched one gem with another. A gem can only scratch other gems that are softer than it is.

The softest mineral, talc, which cannot scratch anything else, is a 1 on the Mohs scale. Diamond, the hardest substance on Earth, can scratch anything, but can only be scratched by another diamond. Diamond is a 10 on the Mohs scale. Most gems must be 5 or above to be strong enough for use in jewelry.



Friedrich Mohs

The Mohs scale measures the hardness of various gems. For comparison, a fingernail has a hardness of 2.5, and a penknife measures 5.5.



What Are Some Types of Gems?

Diamonds form very deep in the earth as a result of huge amounts of pressure and high temperatures. Most diamonds form 140 to 190 kilometers (90 to 120 miles) beneath the Earth's surface. **Magma** brings the diamonds close to the surface through volcanic pipes. In a few instances, diamonds have also been found in deposits left behind by melting glaciers. The diamonds that reach the Earth's surface may be up to 3 billion years old.

Diamonds are the hardest natural things in the world. Because diamonds can cut anything, including metal and stone, flawed or unattractive diamonds are often put on saws and drill tips. Most diamonds are almost colorless, but very rare diamonds can be intense yellow, red, or blue. They are most often found in South Africa, Russia, and Australia.



Diamonds are extremely popular for engagement rings.

One of the most famous diamonds, the Hope diamond, is not the largest, but it is an intense sky-blue color. Its long history of theft and ownership by royalty and the rich gave it a legend of being cursed. The largest diamond ever found is the Cullinan diamond, which was discovered in South Africa. It weighed over 3,100 carats and was as large as a pineapple. It was cut into two gems, one of which, the Greater Star of Africa, weighs 530 carats.



This photo of the Hope diamond shows its actual size.



Do You Know?

Graphite, or pencil lead, is exactly the same mineral as diamonds. In graphite, the atoms are arranged in loose layers. This makes graphite very soft—so soft that if you rub it on a piece of paper, the atoms break off, leaving a pencil mark. In diamonds, those same atoms have been squeezed together so tightly that nothing except another diamond can scratch them off.

Rubies and sapphires are made of the same mineral, corundum (aluminum oxide). Rubies, one of the rarest gems on Earth, must be truly blood-red or pink to be properly classified as rubies. The name *ruby* comes from the Latin word for red, *ruber*. The famous red color of rubies is caused by the element chromium. Any other form of the mineral corundum, no matter the color, is considered a sapphire. However, sapphires are most famous for their deep blue color.

One feature that can occur in both rubies and sapphires is an **asterism**, or star. An asterism is a bright star-shaped pattern within the stone caused by titanium oxide that reflects light very brilliantly. Star sapphires and star rubies are highly valuable and some of the most sought-after gems in the world.



Red raw ruby (left) and two raw sapphires, one blue and one yellow



The quartz family is the most common of all crystals. Quartz is found all over the world, in all colors of the rainbow. Most quartz is so common that anyone can afford it. The largest quartz crystal ever found was about 6 meters (20 ft.) long. It weighed more than 44,000 kilograms (48 tons)—more than a loaded eighteen-wheeled truck. The most valuable quartz is a multicolored stone called opal. Opals shimmer with white, blue, and red-orange colors. They are most often found in Australia.



Quartz crystals are common and can grow very large.

Emeralds are known for their incredible green color. Gem-quality emeralds are rare and usually small, but people prize their color so much that emeralds are more valuable than diamonds. The finest emeralds are found in Colombia. Beryl, the same mineral that forms emeralds, also forms a blue-green stone called aquamarine.

Jade is one of the most prized stones. It occurs in lavender, white, and almost every shade of green, which is the most valuable. Jade is incredibly tough but easy to carve along its grain. Many civilizations, especially in Asia, used jade to make beautiful knives, swords, and axes.



Jade figurine (above); carving jade (left)



Turquoise is often speckled and striped with black.

Blue-green turquoise comes from the deserts of Iran, Tibet, and the southwestern United States. This stone often has pretty spots and streaks running through it. Much of the world's turquoise is set in silver, as the Navajo Native Americans traditionally wore it. The Navajo believed turquoise to be pieces of the sky that had fallen to Earth.

Natural pearls are strangely shaped and extremely rare. It takes an oyster many years to create a pearl from a tiny bit of sand. Almost all of the beautiful round pearls in jewelry stores are **cultured**, or made by people. Pearl farmers insert a round shell bead into an oyster's shell. The oyster covers the bead with nacre, creating a perfectly round pearl. Cultured pearls come in every color of the rainbow, from creamy white to pink to yellow to green and even black.

Gemologists are scientists who study the chemical composition of gemstones. Sometimes gemologists are experts in a particular gemstone, such as diamonds or rubies. Gemologists who work in the laboratory can often identify which area of the world a particular gem came from by studying its chemical composition. They can also tell the difference between natural and synthetic gems by studying clues inside the gems themselves that give information about how the gem was formed.



Natural pearls (inset) are rare and oddly shaped; cultured pearls are round.



This strip mine clears an immense area of land.

Conclusion

Beautiful gems can be found around the world. Many gems symbolize power and wealth. For centuries, people have killed and died for them. In some places, like West Africa and Colombia, the gem trade is still filled with blood and violence. Mining gems with dynamite and strip mines is often dangerous, damaging both humans and the Earth.

Scientists can grow gems in the lab that are identical to the finest natural gems but cost a thousand times less. In the future, created gems might help fill our desire for gemstones' beauty while preserving Earth and its people.

Glossary

asterism (<i>n.</i>)	a star-shaped reflective pattern inside a gem (p. 18)
atoms (<i>n.</i>)	the smallest units of a chemical element that can still retain the properties of that element (p. 6)
crystals (<i>n.</i>)	minerals formed in regular, tight patterns (p. 5)
cultured (<i>adj.</i>)	made with the help of human beings (p. 21)
embedded (<i>v.</i>)	buried in; surrounded by (p. 10)
facets (<i>n.</i>)	flat surfaces of a cut gemstone (p. 11)
fluctuate (<i>v.</i>)	change; shift back and forth or up and down (p. 13)
gemologists (<i>n.</i>)	scientists who study the chemical composition of gemstones (p. 22)
grain (<i>n.</i>)	lines and patterns made by layers of minerals in a stone (p. 9)
lapidaries (<i>n.</i>)	gem cutters (p. 11)
magma (<i>n.</i>)	melted, liquid rock beneath the Earth's surface (p. 16)
nacre (<i>n.</i>)	the material oysters use to make their shells and to make pearls (p. 9)
opaque (<i>adj.</i>)	not see-through (p. 12)
organic gems (<i>n.</i>)	gems made from substances created by living things (p. 5)
polyps (<i>n.</i>)	small sea invertebrates, such as coral, that have a tube-like body and a tentacled mouth (p. 9)

Name _____

INSTRUCTIONS: Read each statement and predict whether it is true or false based on what you know about gems. As you read, confirm or revise your prediction in the third column. If you need to revise the statement, change it to a true statement and write it in the box. If you confirmed your prediction, write the page number that you found the answer.

Statements	T or F?	Revise or Confirm Your Prediction
1. Diamonds are formed by minerals being squeezed under layers of rock.		
2. A ruby is a crystal.		
3. Crystals are formed by volcanoes.		
4. Coral is a gem.		
5. The word <i>carat</i> , which refers to the size of the gem, comes from the name of the vegetable, <i>carrot</i> .		
6. Clarity refers to the color of the gem.		
7. Emeralds are the hardest natural things in the world.		
8. A flawed emerald can be worth more than a perfect diamond.		
9. Cultured pearls are made by machines.		

Name _____

INSTRUCTIONS: Use the boxes below to write the cause-and-effect sequence for each process.
You can look back in the book to help you.

How sapphires are formed (p. 7)

How opals are formed (p. 7)

How gems become jewelry (p. 10-12)



How amber is formed (p. 9)

How pearls are formed (p. 9)

Name _____

INSTRUCTIONS: Read the sentences below. In the blank on the right, tell whether they are simple, complex, or compound. Then circle the parts of the sentences and label them *subject*, *verb*, *phrase*, or *conjunction*.

Gems are beautiful, and they are valuable. compound

subject verb conjunction subject verb

People who cut gems are called lapidaries. _____

Emeralds are very rare. _____

Diamonds are the hardest things on earth,
and nothing else can scratch them. _____

Pearls, which are organic gems,
form inside oysters. _____

The brilliant cut has many facets. _____



LEVELED READER • Y

The Haidas

A Reading A-Z Level Y Leveled Reader

Word Count: 2,264

The Haidas



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Written by
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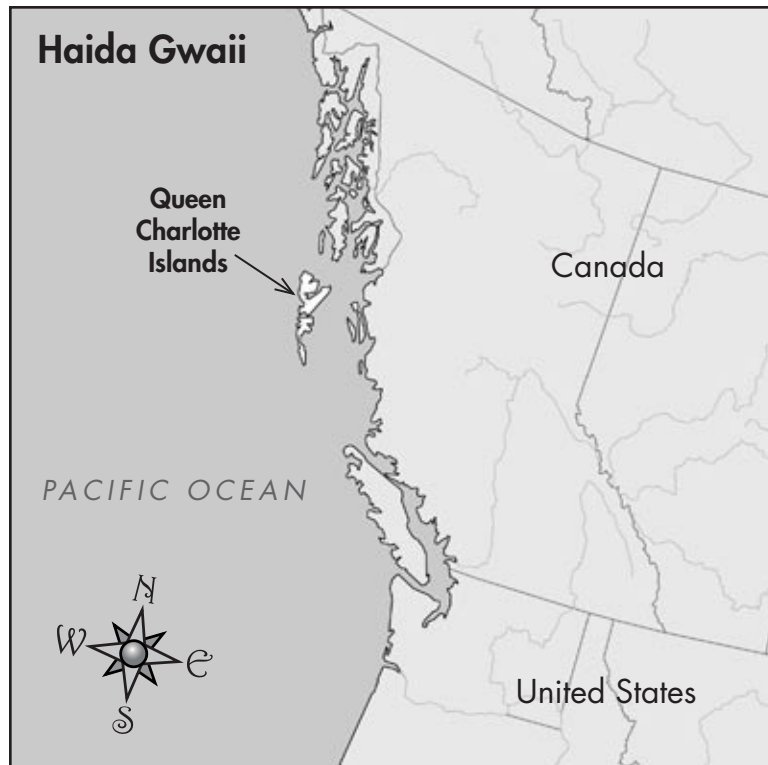


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The Best of Times

From the east, four Haida (HY-duh) war canoes approached the island. They bobbed in the choppy water of the **strait**.

On the rocky shore, young Squawally watched with excitement. The warriors—more than a hundred of them—had been gone for three days. Now they whooped **triumphantly** as they paddled the long cedar dugouts into shore, their tattooed bodies sweating from the effort. When the canoes scraped bottom, the braves jumped out and dragged them onto the rocky beach.

The men pulled a dozen captives from the canoes and pushed them toward the village. The prisoners' hands were tied behind them with leather straps. One of the returning warriors turned to Squawally with a grin. He gave a tilt of his head toward the captives. "They will make fine slaves."

Squawally envied the braves their victory. He wished he could have gone with them. But at thirteen years old, he was still too young for war.

“Was it a tough fight?” he asked. The brave **sneered**. “No, it was easy. Most of their warriors were sick. The whole village was filled with sickness. They say it came from the white people.”

Squawally looked east across the water. It was a soft, late-summer day. Large, puffy clouds hugged the horizon. Behind him, the people of his village went about their daily lives with smiling faces. Cooking smoke rose from the cedar **longhouses**. Outside the houses, tall totem poles stood in silent majesty. Children played.

It was a fine day, and a fine time to be Haida. Their world in Haida Gwaii—a crescent-shaped group of islands west of mainland Canada—was good. Nothing could ever harm it. At least that’s what Squawally wanted to believe. But lately he wasn’t so sure. “I’ve heard stories of the white-people’s illness,” he said. “I didn’t know if they were true.”

The brave made a **dismissive** gesture with his hand. “The people on the coast are weak. We Haida are strong and need not fear this illness.”



The man gave Squawally a slap on the back. “Don’t worry. You especially, young Squawally—you have some important days ahead of you. Right now, you are the pride of the Ravens. Soon, some Eagle girls will be making eyes at you.”

Squawally blushed. The warrior laughed and walked toward his longhouse.

Ravens and Eagles

All the Haida people belonged to one of two large social groups, called Raven and Eagle. Each group was divided into more than 20 families. A member of the Raven group could only marry a person from the Eagle group, and vice versa. Children became members of their mother’s social group. Names, honors, and chiefly rank were passed down through the mother’s line.

A New Totem Pole

The Haida craftsman ran his hands down the long, thick cedar log. The log, stripped of its bark, was lying on its side on supporting timbers. The craftsman was the most renowned totem-pole carver in this part of Haida Gwaii. His two assistants stood quietly by as he examined the log. Squawally and his uncle, Chief Brave Bear, also watched him in respectful silence.

Finally the craftsman turned to Squawally and Brave Bear with a smile. "It's a good log," he said. "I've never seen a finer one. You chose well."

Brave Bear nodded proudly.

The craftsman patted the log. "I'll make it into a pole that will impress the entire village. And it's time you had a new one." He gestured to the aging totem pole that stood nearby, outside of Brave Bear's longhouse.

"The time is now right," Brave Bear replied. "Squawally is becoming a man."

"Someday he will succeed you as chief of the family," said the carver. He turned to Squawally. "How will that be, huh—to rule the longhouse?"

"I'm in no hurry to be a chief," said Squawally. "I wish my uncle long life."

The two men smiled. Then the craftsman returned to discussing the carving. "So what stories is this pole going to tell?" he asked Brave Bear.

Brave Bear gave him detailed instructions on the various family crests that he wanted carved into the pole. At the top would be a great Thunderbird, its wings outstretched. Other animals, including the Grizzly Bear, would have lower positions. Every crest had special meaning to Brave Bear's family group.

Brave Bear and Squawally left the carver to his work. He began drawing figures on the log with a stick of charcoal.



Initiation into Manhood

I will not show pain. I will not show pain.

Squawally repeated those words to himself silently as he sat cross-legged in the center of the longhouse near the **communal** fire. Around the longhouse, the several dozen members of the family, including Squawally's mother and father, watched in silence.

Brave Bear stood above Squawally. "Today Squawally begins his **ascent** into manhood," he said. I bestow on him my name of Brave Bear. May he bring it honor, as I hope I have. In recognition of his second name, he will receive his first tattoo—of our powerful brother, the Grizzly Bear. What prouder image can a young man have on his chest?"

Brave Bear turned and gestured to a man who stood a few steps away. The man walked over to Squawally and knelt down. He opened a leather pouch and removed some fish-bone and thorn needles as well as bags of powdered **pigments**.

The tattoo artist began pricking the skin of Squawally's chest with a needle. He made a series of closely spaced puncture wounds in the shape of a **stylized** grizzly bear. The holes in the boy's chest dripped blood, which the man wiped away.



Throughout the ordeal, Squawally stared straight ahead. He gave no sign of the intense pain the needle was causing him. *I will not show pain*, he kept repeating to himself.

When the design was finished, the artist rubbed some parts of it with black pigment. Other parts he rubbed with red pigment. The pigments would be part of Squawally's flesh for the rest of his life.

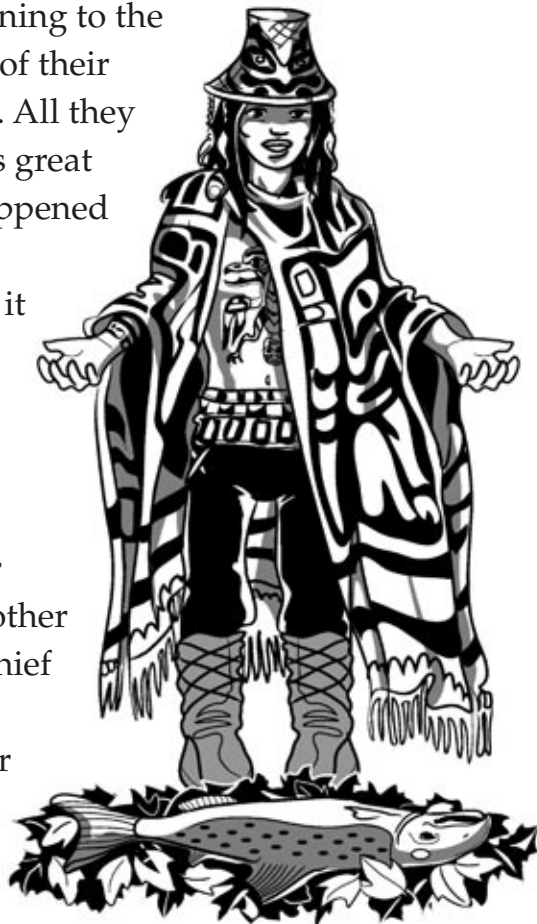
The tattoo, still oozing blood, was finished. Squawally stood and displayed his chest to the family. They smiled and nodded in approval. Squawally had passed his first test of manhood.

The First Salmon of the Year

A large, pink salmon lay on a bed of leaves in the center of the village. The village's head chief stood over it, his hands held out before him. The fish was the first salmon to be caught in the annual **spawning** run.

The Haidas did not know why this yearly event occurred. They didn't understand that the salmon were returning to the lakes and streams of their birth to reproduce. All they knew was that this great rush of salmon happened once a year in late summer. And that it might end forever if they did not show the salmon proper respect.

"Thank you for sending us our brother the salmon," the chief **intoned** as all the villagers gave their own private thanks for the salmon.



Later, the salmon was cooked over a wood fire. When it was done, everyone in the village ate a small piece of it. A woman tending the fire gave a piece to Squawally. He ate it in two bites, **savoring** its taste of both sea and smoke. The return of the salmon in their great numbers had been guaranteed for another year.



The Bounty of the Pacific

The Haidas and other Native Americans of the Pacific Coast had unlimited amounts of food for the taking. Their most important food was salmon, which people caught by the thousands. Salmon were eaten fresh as well as dried for later use. In addition to salmon, the Pacific waters were filled with other kinds of fish and with sea mammals, including whales and seals. The beaches overflowed with clams, oysters, and crabs. The forests yielded plants, nuts, and berries, as well as game animals. It was impossible to go hungry on the Pacific Coast.

Raising the Totem Pole

For ten days, the craftsman and his assistants had labored over Brave Bear's new totem pole. Slowly and carefully, they had carved out the drawn designs. They worked with European-made steel tools obtained through trade networks. Today, they made the finishing touches, applying colorful pigments to the carved designs. Now it was time to raise the pole into position.

Everyone in the village was assembled outside Brave Bear's longhouse. As the women and children watched, dozens of men labored to raise the pole. First they carried the tall pole to a hole that had been dug outside the door of the

What Are Totems?

The poles that were erected by First Nations People of the Pacific Northwest are called totem poles. So what are totems?

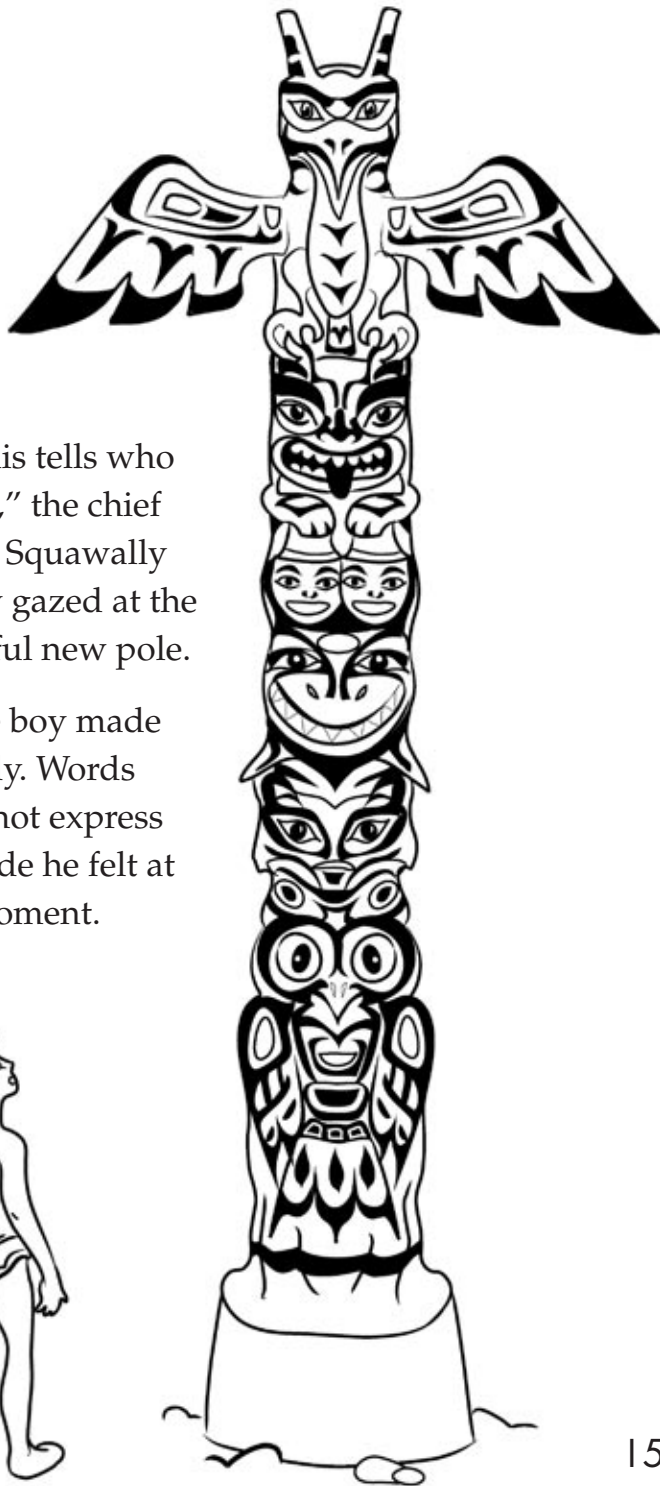
Actually, the correct term is "crests," and totem poles are more accurately called "crest poles." Crests were the various animals, in supernatural form, that were associated with the two main social groups of the Haida—Eagles and Ravens—and with individual families. Early **anthropologists**, or people who study human culture, mistakenly called these symbols "totems." That term had been used more accurately for a system of animal symbols used by Native Americans of the Great Lakes region.



longhouse. Next, they laid the bottom of the pole next to the hole. Then they wrapped ropes around the pole. Some of the men pulled on the ropes while others pushed from behind with long wooden rods.

Slowly the top of the pole reached toward the sky. A moment later, the bottom thunked down into the hole. Everyone laughed and cheered. Chief Brave Bear and Squawally beamed happily.

At the top of the pole, the figure of the mighty Thunderbird looked down on the village, his long beak and extended wings adding to the pole's dramatic appearance. The other main parts of the totem pole were equally impressive: a grizzly bear holding two children, a killer whale, a wolf, an owl. Each crest told a tale relating to the origins of the Raven group or encounters between Brave Bear's ancestors and **supernatural** beings in the forms of those animals.



"This tells who we are," the chief said to Squawally as they gazed at the beautiful new pole.

The boy made no reply. Words could not express the pride he felt at that moment.



The Potlatch

Squawally's introduction to manhood and the raising of the new totem pole were important events in the Haida village. As such, they had to be properly celebrated.

Chief Brave Bear had been preparing for this occasion for many months. He saved great stores of food and gifts. Now the great celebration, known as a potlatch, was under way.

For several days, the people of the village and their guests would feast, sing, play games, and dance. Throughout the festivities, Brave Bear would give everyone gifts of food, blankets, carved boxes, animal hides, and other objects.



Coppers

At the end of a potlatch, the chief hosting the event would present one or more chiefs with "coppers." These were expertly crafted copper objects shaped like a small shield, each decorated with the image of an animal. Coppers were the most highly prized objects in Haida society. They were a symbol of wealth. As a challenge, a chief would sometimes break a copper and offer the pieces to another chief. The other chief would then have to break a copper of his own of equal or greater value—if he had one. If he didn't and was unable to meet the challenge, he was **humiliated**.



Only a wealthy man could hold a potlatch, and at the end of such a celebration, all of his wealth was gone. But Chief Brave Bear wasn't concerned about that. He knew that he would regain what he had lost—and more—at future potlatches held by other chiefs.

Brave Bear smiled broadly as he watched his fellow villagers and the many visitors enjoy the great party he was throwing. The air was filled with talk, laughter, and singing. His heart swelled with joy.

Brave Bear saw Squawally seated on a log, eating a chunk of roasted elk meat. But the boy did not seem to be eating with much appetite, and his face looked glum. The chief walked over to his nephew and sat down.

"Why are you looking so downcast?" he asked. "This celebration is for you. You should be happy."

"I know, uncle," the boy replied. "But . . . the **shaman** just told me that the prisoners captured in the raid have gotten sick. He's used all his knowledge to cure them, but it isn't working."

Brave Bear shook his head and smiled. "Why should you care about a few slaves? Let them go to the afterlife. They'll be happier there."

"It's the sickness I'm thinking about. I'm afraid our people will get it."

"Don't worry yourself. The Guardian Spirits will look after us. Now enjoy yourself."

Squawally nodded. His uncle gave him a pat on the back and departed.

Squawally looked out across the water of the strait. The eastern horizon was blanketed with gray clouds. Autumn was approaching.

Afterword

Haida Gwaii had been the home of the Haida people since early times. Their ancestors from Asia may have settled there at the end of the last ice age, more than 10,000 years ago.

For generation after generation, the Haidas lived prosperous lives on their beautiful forested islands. They were fierce warriors who took many captives as their slaves. At least 7,000 Haida people were living there in the late 1700s, when they encountered the first European explorers. They were divided into at least fifty villages in areas now part of western Canada and the northwestern United States. Another group of Haida people had settled in Alaska.

The Haidas' world came crashing down in the 1860s. A series of smallpox epidemics, transmitted by settlers from Europe, wiped out many Native American villages. More than 90 percent of the Canadian Haida died of smallpox and other diseases against which their bodies had no natural defenses.

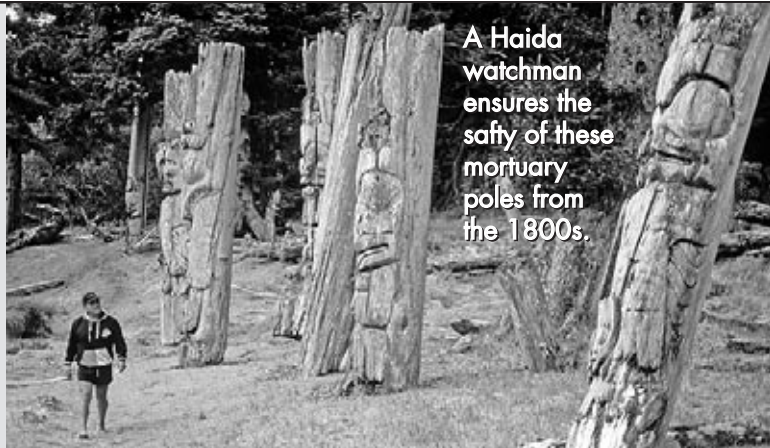
Later, their troubles continued. Beginning in the 1870s, Christian missionaries arrived in the islands to convert the surviving Haidas. The missionaries persuaded the Haidas to forget their old ways. The missionaries pulled down many of the totem poles and destroyed them. Some totem poles were burned for firewood.

The Canadian government also began taking steps to turn Native Americans away from their traditions. In 1884, it outlawed potlatch celebrations. Some Haida continued to hold potlatches, though they tried to keep them secret. The last potlatch was held in 1921. The government discovered it and **confiscated** all the gifts.

It appeared that the Haida culture was heading toward **extinction**.



Haida teens sing and dance traditional songs during a feast in Skidegate.



A Haida watchman ensures the safety of these mortuary poles from the 1800s.

Things began to improve for the Haidas in the mid-1900s. In 1951, the government repealed its ban on potlatches. Although the celebrations would never again be the huge events that they had been, they would at least be legal.

The Haida population, which numbered fewer than 600 in the early 1900s, has increased to at least 4,000. About 1,500 of those people live in two villages, Skidegate and Old Massett. The villages have been **designated** Native American reserves, or reservations, by the Canadian government. Each Haida village is governed by a village council. There are also five other population centers in Haida Gwaii.

Like all Native Americans in Canada, the Haidas are full citizens and can live where they choose. The Haida people are one of Canada's First Nations, as the country's Native American populations are called.

The two Haida villages have been prospering, bringing in many tourists. Arts and crafts have become a leading industry. Many Haida artists make a good living selling their works to visitors.



Students and volunteers from a Seattle, Washington, school paddle *Ocean Spirit*. *Ocean Spirit* is a traditional Haida canoe the students helped carve with artist Saaduuts.

Remnants of the old Haida culture can be seen at the Gwaii Hanaas National Park Reserve and Haida Heritage Site. Part of this historical area, Anthony Island, features the remains of ten Haida longhouses and thirty-two totem poles. The island can be reached only by boat or seaplane.

Glossary

anthropologists (<i>n.</i>)	people who study human societies around the world (p. 13)
ascent (<i>n.</i>)	movement upward in position, power, or importance (p. 9)
communal (<i>adj.</i>)	for, or shared by, everyone in a group or community (p. 9)
confiscated (<i>v.</i>)	to have taken someone's private property by authority, or preceived authority (p. 20)
designated (<i>v.</i>)	marked, named, or chosen for a special purpose or position (p. 21)
dismissive (<i>adj.</i>)	having or showing a lack of interest (p. 5)
extinction (<i>n.</i>)	the process by which an entire group of animals or plants dies out (p. 20)
humiliated (<i>v.</i>)	made to feel completely awkward, uneasy, or self-conscious (p. 16)
intoned (<i>v.</i>)	said in a serious and formal way, often as a chant or as nearly singing (p. 11)

longhouses (<i>n.</i>)	a type of large, long house made from local materials used by some Native American nations as shelter for family groups (p. 5)
pigments (<i>n.</i>)	substances that give color by reflecting some colors of light and absorbing other colors (p. 9)
savoring (<i>v.</i>)	tasting with joy or appreciation (p. 12)
shaman (<i>n.</i>)	a healer or spiritual leader in a tribal society (p. 18)
sneered (<i>v.</i>)	to have shown a strong feeling of dislike (p. 5)
spawning (<i>n.</i>)	the process of producing and depositing eggs (p. 11)
strait (<i>n.</i>)	a narrow passage of water connecting two large areas of water (p. 4)
stylized (<i>adj.</i>)	made using particular artistic effects (p. 9)
supernatural (<i>adj.</i>)	beyond what can be explained by natural laws; often relates to religion (p. 14)
triumphantly (<i>adv.</i>)	in a manner indicating joy at succeeding (p. 4)

Name _____

Instructions: Write a prediction in the *Make* column. Revise the prediction as you read in the *Revise* column, and put a check mark in the *Confirm* column if you can confirm your prediction after reading. Write the events that actually happen in the *Actual* column.

Make	Revise	Confirm	Actual

Name _____

Instructions: Use clues from the book and what you already know to make inferences about events or characters in *The Haidas*. In the first row, make inferences about how Squawally feels about getting his tattoo; in the second row, make inferences about the importance of the totem pole; in the third row, make inferences about how Squawally feels about the white man's sickness.

Story Clues	+	What I Know	=	Inference

Name _____

Instructions: Read the sentences below and decide whether they contain dashes or hyphens. Then write *dash* or *hyphen* on the short line to the left of the sentence. If the sentence contains a dash, explain how it is used on the lines below the sentence (to clarify information or to add a thought).

_____ 1. The warriors—more that a hundred of them—had been gone for three days.

_____ 2. Their world in Haida Gwaii—a group of islands west of mainland Canada—was good.

_____ 3. “You especially, young Squawally—you have some important days ahead of you.”

_____ 4. All the Haida (HY-duh) people belonged to one of two large social groups.

_____ 5. “How will that be, huh—to rule the longhouse?”

_____ 6. He sat cross-legged in the center of the longhouse near the communal fire.

_____ 7. He will receive his first tattoo—of our powerful brother, the Grizzly Bear.

_____ 8. They worked with European-made steel tools obtained through trade networks.

_____ 9. Crests were the various animals that were associated with the two main social groups of the Haida—Eagles and Ravens.

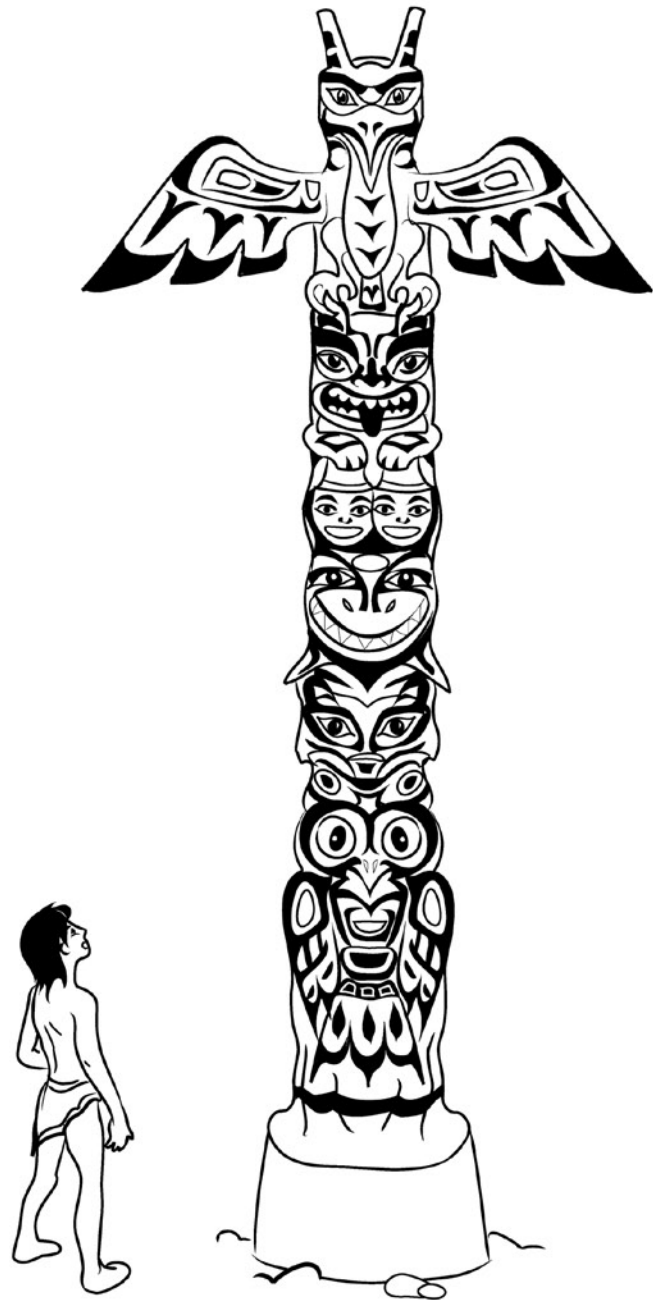
_____ 10. The other chief would then have to break a copper of his own of equal or greater value—if he had one.



Name _____

Instructions: Add the -y or -ly suffix to the following words to create an adjective or an adverb.

1. triumphant _____
2. rock _____
3. puff _____
4. day _____
5. late _____
6. chief _____
7. quiet _____
8. final _____
9. proud _____
10. silent _____
11. year _____
12. slow _____
13. careful _____
14. accurate _____
15. mistaken _____
16. happy _____
17. might _____
18. proper _____
19. expert _____
20. wealth _____
21. broad _____



What Do You Think About Climate Change?

A Reading A-Z Level Y Leveled Reader

Word Count: 2,447




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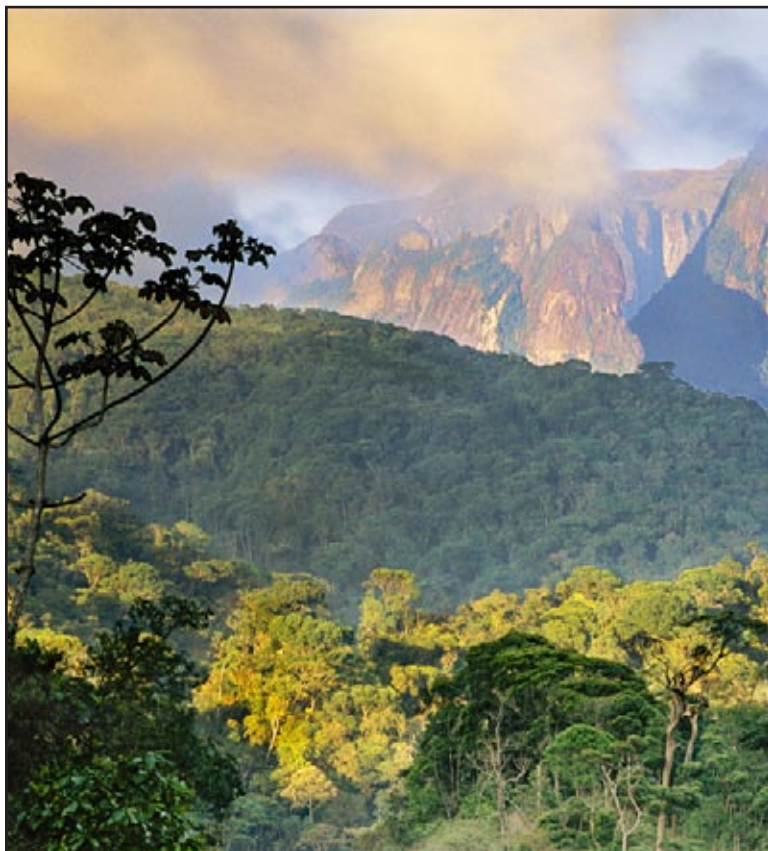
What Do You Think About **Climate Change?**



Written by Alfred J. Smuskiewicz

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Introduction: What Is Climate Change?

What is the weather like today? Is it warm or cold? Sunny or rainy? It's easy to see what the weather is like on any given day, but what about the climate? Over long periods, there are certain patterns to the weather. These long-term patterns are called **climate**, and sometimes these patterns change.

For example, it was colder in Europe from 1400 to 1800 than it was from 1100 to 1300. That was because the pattern of weather—the climate—changed between these two periods.

Many scientists believe that the climate is changing again, back to a warmer pattern. They call this change “**global warming**.” Although some people are concerned that global warming could harm plant and animal communities and human societies, other people believe that there is little to worry about.



This book tells what scientists have discovered about climate change. Read it carefully and then ask yourself, “What do I think about climate change?”

Evidence for Climate Change

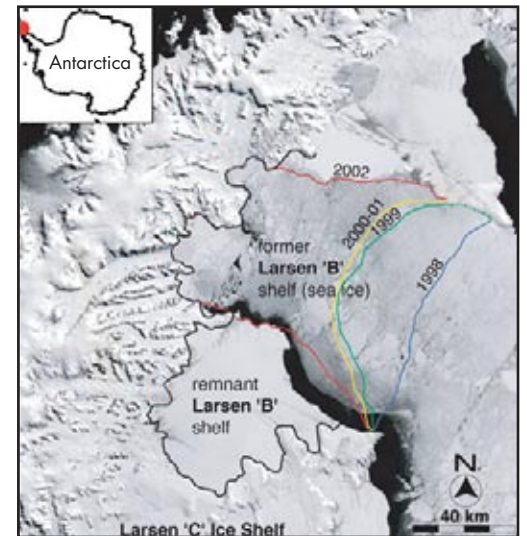
When scientists have an idea, such as the idea that global warming is happening, they need to present evidence to support that idea. What evidence have scientists discovered about global warming?

Meteorologists (scientists who study the weather) have kept careful records of Earth's surface temperatures since the mid-1800s. Surface temperatures include the temperature of the air near the ground, such as what you see on an outdoor thermometer. Surface temperatures also include temperatures of the ocean surface. These records show that the average surface temperature around the world has increased by roughly 1.0 °F to 1.8 °F (0.6 °C to 1.0 °C) since the late 1800s.



Scientists have also compared records of this recent temperature increase with other evidence of what Earth's climate was like thousands of years ago. This comparison led a group of U.S. scientists to report in 2006 that Earth's surface is probably warmer now than at any time in the past 12,000 years.

Old photographs provide additional evidence that Earth's surface is warming. For example, photos of certain mountain **glaciers** taken in the early to mid-1900s show that the glaciers were larger years ago than they are today. Scientists have found that some of these mountain glaciers are melting and shrinking at faster and faster rates. Researchers have observed such glaciers in Alaska, South America, Europe, and Asia. Many scientists believe that this shrinking is being caused by an increase in global surface temperatures.



Melting glaciers helped cause the shattering of the 400-year-old Larsen B ice shelf in Antarctica.



polar bear



calving iceberg

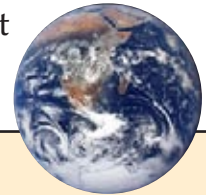
Evidence indicates that ice around the North and South Poles is also melting. Much of this evidence comes from photographs of the polar regions taken by cameras aboard satellites.

Satellite photos have shown that the amount of sea ice in the Arctic Ocean around the North Pole has decreased since the 1970s. Measurements revealed that, *between 2004 and 2005*, an area of sea ice the size of Texas disappeared from the Arctic.

Because of the melting Arctic ocean ice, the survival of polar bears may be at risk. Polar bears use ice floes (floating ice) in winter as platforms to hunt seals. Scientists reported in 2005 that there are not as many ice floes in the Arctic sea as there used to be. As a result, many polar bears are not getting enough to eat, and some may be drowning.

Near the South Pole, satellite photos show that both sea ice and ice sheets (ice covering land) in western Antarctica are melting. In 2002, photos showed an **ice shelf** larger in area than Rhode Island breaking into small pieces and drifting away from Antarctica. An ice shelf is part of an ice sheet that extends into the sea.

When ice on land, such as on Antarctica and Greenland, melts, the meltwater flows into the ocean. Over time, this extra water could cause sea levels to rise. Researchers with the United Nations have reported that the average sea level around the world has risen by at least 4 inches (10 cm) since the early 1900s.



Searching for More Evidence

More evidence for global warming exists than is described in this chapter. Other evidence pointed to by scientists includes:

- changes in migration habits of certain birds
- an unhealthy condition of coral reefs called "bleaching"
- possible increases in extreme weather, such as hurricanes

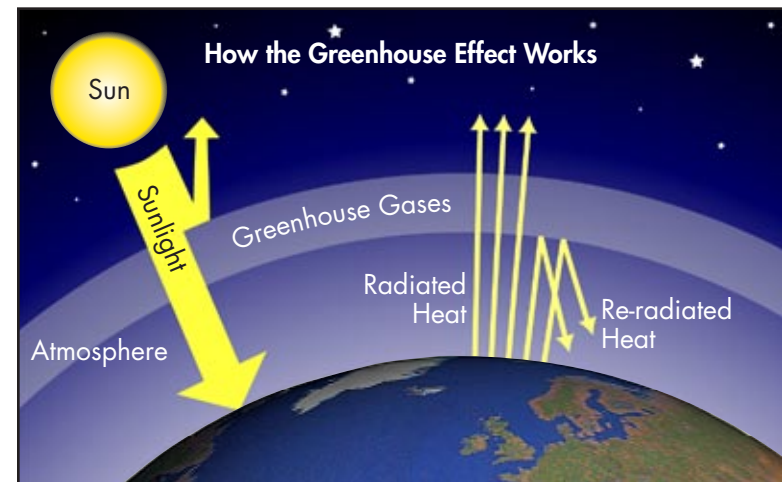
You can find out more about this evidence by using the Internet. However, you need to be careful about which websites you use. Many websites about global warming contain incorrect information. Websites run by government agencies, universities, or scientific organizations are usually the best. When you read about any evidence, remember to ask yourself, "Does this make sense to me?"

What Is Causing Climate Change?

There are many ideas as to what may be causing global warming and climate change. These ideas can be divided into two main categories: human activities and natural causes.

The main human activity blamed for global warming is the burning of **fossil fuels** (coal, oil, natural gas) in automobiles, factories, and electric power plants. When these substances are burned for fuel or energy, carbon dioxide gas and other gases are released into the **atmosphere** (air). These gases build up in the atmosphere over time. The gases let much of the energy of sunlight pass through the air to warm Earth's surface. Earth's surface then radiates (sends out) heat energy back into the air.

Much of the radiated heat energy drifts off into space. However, some of the heat energy is trapped near Earth's surface by carbon dioxide and certain other gases in the atmosphere. The trapped heat energy is then reradiated back to the surface, warming the surface more. Because this process acts like a greenhouse (a building in which special glass walls trap heat to warm plants inside), it is called the **greenhouse effect**. Carbon dioxide, methane, and other gases that trap heat are called **greenhouse gases**.



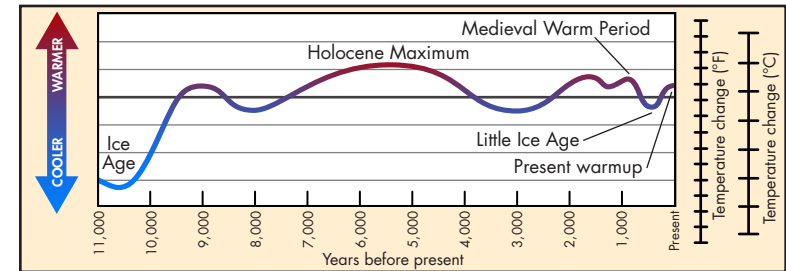
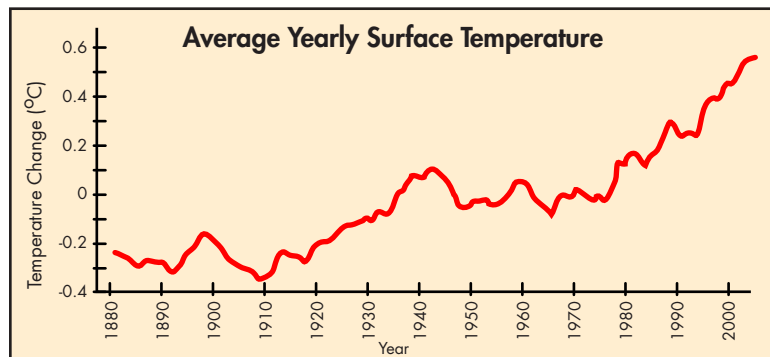
Greenhouse Gas Sources

Carbon dioxide	Fossil fuels, burning and cutting down forests, volcanoes
Methane	Burning forests, microbes in wetlands and inside cattle intestines
Nitrous oxide	Fossil fuels, burning forests, chemical reactions in soil and ocean
Halocarbons	Old spray cans, certain cleaning fluids, other products
Aerosol particles	Fossil fuels, burning forests, volcanoes
Ozone	Automobiles, power plants
Water vapor	Evaporation, plants

The greenhouse effect is a natural part of how Earth functions. If Earth did not have a natural greenhouse effect, it would be as cold as Mars—too cold for liquid water or life. However, many scientists believe that the carbon dioxide released into the air by the burning of fossil fuels is increasing the warming of the greenhouse effect.

What is the evidence that carbon dioxide from fossil fuels is related to global warming? Humans began burning fossil fuels in large amounts when **industrialization** (the use of power-driven machinery) became widespread in the mid-1800s. Since then, measurements suggest that the amount of carbon dioxide in the atmosphere has increased by about 25 percent. According to meteorologists, Earth's surface temperature has increased during this same time.

Another human activity that has increased the carbon dioxide in the air is the burning and cutting down of forests, or deforestation. Trees and other plants remove carbon dioxide from the air to carry out **photosynthesis**, the chemical process by which plants make their own food. When there are fewer plants to carry out photosynthesis, more carbon dioxide builds up in the atmosphere.



Some scientists point out that global warming does not have to be caused by human activities. Global warming and global cooling happened over and over before people started burning fossil fuels.

During the past few hundreds of thousands of years, there have been several **ice ages**, when much of Earth's surface was covered by ice. In between these ice ages have been warm periods. The last ice age ended about 11,500 years ago. According to geologists, we are now in a warm period between two ice ages.

What else do weather records and other scientific evidence show? In Europe, the climate cooled between the "Medieval Warm Period" (about 1100 to 1300) and the "Little Ice Age" (about 1400 to 1800). The climate has been warming since the end of the Little Ice Age.

These earlier climate changes had natural causes. Perhaps the current global warming has some natural causes, too.

If meteorologists have been keeping careful records of Earth's temperatures since only the mid-1800s, how can we know what earlier temperatures and climates were like?



One way to know is by studying growth rings in cross-sections of very old trees. Trees grow more when climate is wet and warm than when climate is dry and cold. Tree rings are thicker when there is greater growth. By analyzing such rings, scientists can discover trends in temperature going back hundreds of years.

To discover even older temperature trends, scientists use various other methods. One such method is to examine ice cores. Ice cores are long, cylinder-shaped samples of ice that are drilled out of the ground in Antarctica and other frozen places. An ice core contains chemical evidence



A library of ice cores



Scientists examine an ice core that shows volcanic activity under a glacier.

of what the atmosphere was like during different times—going back many thousands of years. The deeper the ice, the farther back in time it was formed. Certain chemicals, such as large amounts of carbon dioxide, tell researchers that Earth's climate was relatively warm at the time the ice formed.

Such methods allow scientists to learn about Earth's past natural changes in climate. Although scientists do not fully understand the natural causes of climate change, they suspect that a number of factors are involved. For example, the amount of heat energy produced by the Sun varies from time to time. Also varying over time are the shape of Earth's **orbit** around the Sun and the angle of the tilt that Earth makes on its **axis** (the imaginary line about which Earth spins).

Possible Results of Climate Change

Whether global warming is caused by human activities, natural factors, or a combination of both, it may result in certain changes to the planet. How do scientists predict these changes? What might these changes be? What would such changes mean to you?

One of the main ways that scientists try to predict the future of climate change is by using **computer models**. These are computer programs based on mathematical equations about sunlight, heat, rainfall, wind, ocean currents, and other climate factors. Scientists change these equations in different ways to mimic the ways that these factors might change in the real world. The computer program then figures out the most likely effects that these factors would have on Earth's climate.

Computer models are most useful for helping researchers learn several possible results of climate change. However, predictions made with computer models are not certain. Maybe these predictions will really happen; maybe they will not happen. The following possibilities are based on computer models predicting very serious effects of global warming. Other computer models predict far less serious effects.

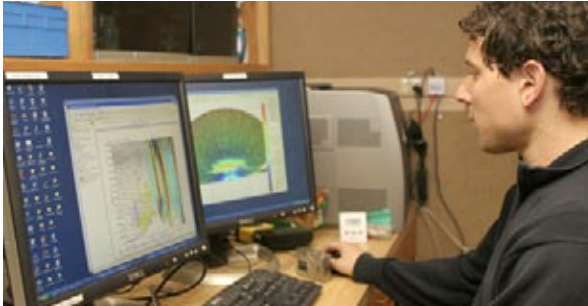
According to some computer models—if current rates of warming continue—Earth's average surface temperature may increase by as much as 10 °F (5.5 °C) by 2100. Such a great rise in temperature could cause enormous changes in the natural habitats of many plant and animal species. Wetlands might change into grasslands, and grasslands might change into deserts. Plants and animals that could not adjust to these changes would die out.

Large increases in Earth's surface temperature could cause vast amounts of ice on Antarctica and Greenland to melt into the sea. This could, in turn, could result in rises in sea level of several feet. If all the ice on Greenland were to melt, for example, sea levels might increase by more than 20 feet (6 m), according to some computer models.

An Inconvenient Truth

In 2007, former U.S. Vice President Al Gore was awarded the Nobel Peace Prize for his work in warning the public about the possible dangers of global warming. Gore also wrote a book and appeared in a movie about global warming, both of which were titled *An Inconvenient Truth*. The book and movie featured several possible disasters that might be in store for Earth because of global warming. These disasters included the extinction of many species of animals, deadly floods in many countries, and much more powerful hurricanes. It is important to keep in mind that these disasters are not *definitely* going to happen. They are only the worst among many different possibilities.

Computers help map the pollutants in the air above major urban areas.



If sea levels were to rise high enough and fast enough, many cities along coasts and on small islands would be flooded by ocean water and destroyed. These cities might include New York City, Boston, and other large U.S. cities with millions of people.

Earth's surface temperature affects the weather in many complex ways. Computer models predict that weather in different parts of the world would be affected by continued warming in different ways. In some areas, it could become drier and more difficult to grow crops. This would lead to water and food shortages. In other areas, the growing season could lengthen because of warmer, wetter weather. Crops in these areas would become easier to grow.

Changing weather caused by global warming might also mean more hurricanes, tornadoes, snowstorms, or droughts—depending on where a person lives.



Brazil's city of Rio de Janeiro faced a dengue fever epidemic in March 2008. Mosquitoes help spread the disease.

Warmer weather could mean more disease. Many kinds of viruses, bacteria, and other germs spread more easily when the weather is warm than when it is cool. Among such diseases are malaria, dengue (a disease that causes fever and pain), and lung infections.

How Global Warming Might Affect You

- You might have to conserve electricity, such as by watching less television and using the computer less often.
- You might have to deal with more tornadoes, hurricanes, heat waves, and other dangerous weather.
- You might experience water or food shortages.
- You might be at increased risk of getting certain diseases.
- You might find that wild animals you enjoy seeing, such as certain birds and butterflies, become less common.

What Is Being Done About Climate Change?

Because of the serious effects that climate change might have on human society and wildlife habitats, governments around the world are working on this problem. They have come up with plans to limit the possible effects of global warming.

Governments of most countries support a plan to limit global warming called the Kyoto Protocol. This plan is named after the city in Japan where the first version of it was written in 1997.

According to the plan, industrialized countries will reduce the amount of carbon dioxide and other greenhouse gases released by power plants, automobiles, and other sources. Industrialized countries are those nations in which there is widespread use of machinery and fossil fuels. The greenhouse gas reductions have to be great enough to reach certain levels by certain dates, depending on the country.



An Indonesian student plants a tree as part of a climate conference campaign.

As of 2008, the government of the United States had not approved the Kyoto Protocol. Some officials in the U.S. government were concerned that the Kyoto Protocol might harm the U.S. economy.

Both the federal government and state governments in the United States are working to reduce emissions (releases) of greenhouse gases in other ways. For example, some laws require power plants and factories to reduce their carbon dioxide emissions, such as by using “scrubbers.” Scrubbers are filtering systems that trap carbon dioxide or other **pollutants** before they are released into the air. Certain newer systems can then store the carbon dioxide underground. Other laws require that automobiles emit less carbon dioxide.



Some U.S. factories have reduced the amount of greenhouse gases they emit, but others have not.

The U.S. government also gives grants (awards of money) to scientists to help them study “renewable” ways of producing energy. Most **renewable energy** sources do not use fossil fuels or emit greenhouse gases. They are called renewable, because—unlike fossil fuels—their supplies will not eventually run out.



Maple Ridge Wind Farm in New York produces enough energy to power about 160,000 homes.

Renewable energy sources include **hydropower** and **geothermal**, wind, and solar power. Hydropower uses moving water, such as a river, to produce energy. Geothermal power uses hot water or steam from inside the ground. Wind power uses moving air. Solar power uses sunlight.

Nuclear power is another way to produce energy that does not emit greenhouse gases. However, nuclear power produces dangerous wastes.

Besides cutting emissions of greenhouse gases, we can also remove some greenhouse gases from the atmosphere. The best way to do this is by planting more trees.

Conclusion: What Do You Think?

Now that you know what scientists have discovered about climate change and global warming, it's time for you to think for yourself. What do you think about climate change? How would you answer the following questions? What evidence can you give to support your answers?

- Is Earth becoming warmer?
- If so, why is Earth becoming warmer?
- Could there be more than one reason why the planet is warming?
- What might be some results of global warming for plants, animals, and humans? Which results do you think are most likely and least likely?
- What, if anything, should be done about climate change?
- Will you change your behavior in any way to help reduce climate change? If so, in what ways?
- How will you find out more about climate change?

Ways You Can Fight Global Warming

Less use of fossil fuels equals less release of greenhouse gases. You can reduce your use of fossil fuels by:

- Using less electricity
- Recycling aluminum cans, paper, and plastics
- Walking or riding your bicycle to places that you have to go
- Using solar-powered electronic products, such as calculators and watches
- Planting trees and gardens.

Glossary

atmosphere (<i>n.</i>)	a layer of gases surrounding a planet, star, or moon (p. 9)
axis (<i>n.</i>)	an imaginary line around which an object, such as Earth, rotates (p. 14)
climate (<i>n.</i>)	the weather conditions in an area over a long period of time (p. 4)
computer models (<i>n.</i>)	representations of real objects or ideas by computer programs using mathematical equations (p. 15)
fossil fuels (<i>n.</i>)	energy sources taken from the earth, such as coal, oil, and natural gas (p. 9)
geothermal (<i>adj.</i>)	relating to heat produced inside Earth (p. 21)
glaciers (<i>n.</i>)	large bodies of accumulated ice and compacted snow that are found year-round and slowly move downhill (p. 6)
global warming (<i>n.</i>)	an increase in the average temperature of Earth's atmosphere and oceans, especially an increase great enough to change the climate (p. 4)
greenhouse effect (<i>n.</i>)	the process by which heat is trapped inside Earth's atmosphere by gases (p. 9)
greenhouse gases (<i>n.</i>)	gases in Earth's atmosphere that trap heat and contribute to global warming (p. 9)

hydropower (<i>n.</i>)	electricity produced by moving water (p. 21)
ice ages (<i>n.</i>)	periods in Earth's history when ice sheets covered large areas of land (p. 12)
ice shelf (<i>n.</i>)	a chunk of ice sheet extending into the sea and floating on the water (p. 8)
industrialization (<i>n.</i>)	the change in a group and its lifestyle that comes with widespread use of machines, automation, and technology to create goods (p. 11)
meteorologists (<i>n.</i>)	scientists who study Earth's atmosphere, climate, and weather (p. 5)
orbit (<i>n.</i>)	the path that one celestial body, such as a planet or moon, follows around a larger celestial body, such as the Sun (p. 14)
photosynthesis (<i>n.</i>)	the process by which chlorophyll in plant cells transforms sunlight, water, air, and nutrients into food (p. 11)
pollutants (<i>n.</i>)	dirt or debris in the air, in water, or on the ground that causes something to become unclean (p. 20)
renewable energy (<i>n.</i>)	a source of energy that is not depleted by use (p. 21)

Name _____

Instructions: In the first row, write what you already know about the topic. In the second row, write what you would like to know. After you finish reading, fill in the third row with what you learned.

What I already know
What I like to know
What I still would like to know

WHAT DO YOU THINK ABOUT CLIMATE CHANGE? • LEVEL Y • 1

SKILL: KWLS/ASK AND ANSWER QUESTIONS

Name _____

Instructions: Write cause-and-effect relationships in the correct boxes below.

Cause



Effect

Cause



Effect

Cause



Effect

WHAT DO YOU THINK ABOUT CLIMATE CHANGE? • LEVEL Y • 2

SKILL: CAUSE AND EFFECT

Name _____

Instructions: The sentences below are taken from *What Do You Think About Climate Change?* Read each sentence and add parentheses in the correct location. Next, on the line below each sentence, write whether the parentheses were added to *clarify* or to *add* more information.

1. Meteorologists scientists who study the weather have kept careful records of Earth's surface temperatures since the mid-1800s. _____
2. Near the South Pole, satellite photos show that both sea ice and ice sheets ice covering land in western Antarctica are melting. _____
3. When these substances are burned for fuel or energy, carbon dioxide gas and other gases are released into the atmosphere air. _____
4. Because this process acts like a greenhouse a building in which special glass walls trap heat to warm plants inside, it is called the greenhouse effect. _____
5. Humans began burning fossil fuels in large amounts when industrialization use of power-driven machinery became widespread in the mid-1800s. _____
6. In Europe, the climate cooled between the "Medieval Warm Period" about 1100 to 1300 and the "Little Ice Age" about 1400 to 1800. _____
7. Also varying over time is the shape of Earth's orbit around the Sun and the angle of the tilt that Earth makes on its axis the imaginary line about which Earth spins. _____
8. Among such diseases are malaria, dengue a disease that causes fever and pain, and lung infections. _____
9. Both the federal government and state governments in the United States are working to reduce emissions releases of greenhouse gases in other ways. _____
10. The U.S. government also gives grants awards of money to scientists to help them study "renewable" ways of producing energy. _____

Name _____

Instructions: Below are words taken from *What Do You Think About Climate Change?* Cut along the dotted lines to separate the boxes. Then move the boxes around on a flat surface to arrange the words in alphabetical order and glue them onto another sheet of paper.

✂

atmosphere	ice ages	glaciers	ice shelf
orbit			global warming
geothermal			computer models
ice sheets			fossil fuels
climate			atmospheric
ice cores	greenhouse gases	photosynthesize	specific
photosynthesis	species	communities	greenhouse effect

Robin Hood Wins the Sheriff's Golden Arrow

A Reading A-Z Level Y Leveled Reader

Word Count: 2,385



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Robin Hood Wins the Sheriff's Golden Arrow



An English Folktale Adapted by Karina Barrentine
Illustrated by David Cockcroft

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Robin Hood Wins the Sheriff's Golden Arrow

This story is an English folktale adapted for Reading A-Z by
Karina Barrentine from an original retelling
by Bertha E. Bush published in 1912.



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Correlation

LEVEL Y	
Fountas & Pinnell	T
Reading Recovery	40
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Introduction

To protect themselves from the ruling lords who hunted them as outlaws and robbers, Robin Hood and his band of Merry Men lived in hiding deep within the heavily wooded Sherwood Forest. While the conditions of this outdoor life could be difficult, the men felt a strong kinship with the trees, birds, and other animals of their realm. More than a hundred men strong, the band had built sturdy shelters of bark and logs to keep out the rain and cold. When the weather was mild enough, they slept outdoors on deerskins, under the stars. They did not mind the lack of soft beds or tables and chairs. They cooked their meals over a roaring fire and ate together, sitting on the ground or on fallen logs.



Robin's men had assorted backgrounds and histories. Once, they had been common men who worked their farms or plied their skilled trades in freedom. But most had lost their homes, farms, and even their families, to the cruel laws, policies, and taxations under which the entire country now suffered as a conquered land. Each man was devoted to Robin Hood's heartfelt cause and readily obeyed his every request, and each had sworn to protect the poor and landless, as well as women and children, with their very lives. Robin needed only to sound a note on his horn, and the men would appear, ready for the next task. These hearty men were the best archers, wrestlers, and swordsmen in all of England, but every one of them knew that Robin Hood was the best archer in the land.

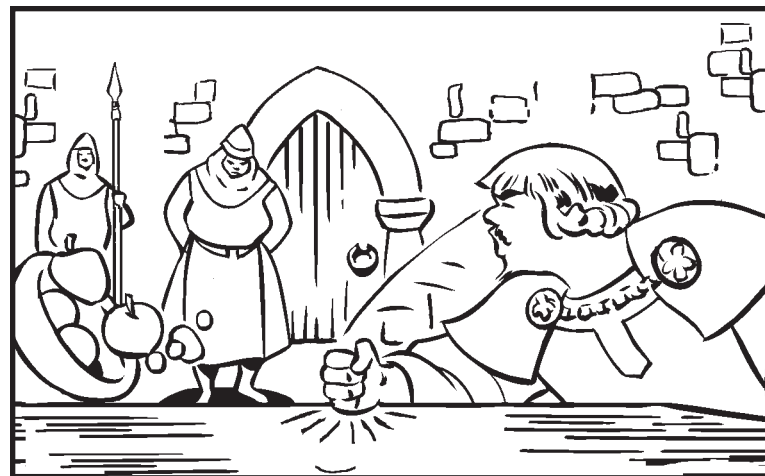


Times were dire in England since the French had conquered the country. The greedy men who now governed had ruled harshly for many years, without mercy or understanding for their own benefit. The English monarch, King Richard, had been far away at war for many years and had no knowledge of how his people were treated in his absence. And so, to mount a campaign against the effects of these unjust laws and crippling taxes, Robin had become an outlaw. His reasoning and tactics were simple: he would steal back what had been stolen from the people. To this end, Robin Hood's men would stop and rob wealthy travelers who ventured along the forest roads. Or they would lure unsuspecting lords and tax collectors with the promise of a grand feast in the forest. When the lords came to dine, Robin's men would empty their guests' bulging purses, taking back the gold the lords had stolen from the people. To his enemies, Robin and his men were outlaws and robbers; to the common folk whom they helped, they were beloved heroes.



The Sheriff of Nottingham

The Sheriff of Nottingham hated Robin Hood and hated the people who revered him. His anger fueled his smoldering rage and sometimes clouded his judgment. He wanted nothing more than to catch Robin Hood and hang him publicly, but, time after time, Robin escaped capture. The Sheriff only grew angrier and more spiteful each time he was outwitted. Once, he had sent a stout guard with a warrant to arrest Robin Hood. Robin met the guard on the road and invited him to a feast in the forest. The amiable guard ate so much that he fell asleep and, while the guard slept soundly, Robin stole the warrant right out of his pocket! Without a warrant, the guard couldn't arrest Robin Hood and his men, and he had to go back to the Sheriff empty-handed—but well fed.



On another day, the Sheriff had tried to trap Robin Hood's band by luring them out to hunt the king's own deer. Venison, deer meat, was one of Robin Hood's favorite foods, but the deer of Sherwood Forest were considered the personal property of the king, and for common people to hunt them was forbidden by law. Commoners caught poaching deer in the forest were hanged. When young Will Scarlet shot a stag and went to retrieve it, the Sheriff's men jumped up from their hiding places to capture him. They rained arrows down upon Will, but Will was quick and escaped unhurt. Scores of Robin Hood's men, who had been in hiding nearby, returned the attack with their own arrows—but their aim was much better. Many of the Sheriff's men were wounded so, out skilled and outnumbered, they fled.



On another occasion, the Sheriff did manage to catch three of Robin Hood's men. The Sheriff planned to hang the men publicly in the town square of Nottingham as warning to others who might want to help Robin Hood. But Robin and his forest band came to the rescue of their comrades. His Merry Men disguised themselves as townsfolk and took places amongst the crowd, while Robin dressed as the hangman. He wore all black, with a hood hiding his face. As the well-disguised Robin walked his captured men toward the gallows, he secretly placed weapons in their hands as he cut the ropes that bound their wrists. Robin Hood and all of his men then fought their way out of the square and back to safety in Sherwood Forest. All the townspeople present that day saw that Robin had outsmarted the Sheriff once again.

But the most humiliating defeat for the Sheriff had occurred right in his own home. Robin had disguised himself as a butcher, and Robin's right-hand man, Little John, wore the clothes of a servant. In the Sheriff's home—right under his nose—the two outlaws robbed him of his best silver dinner plates.

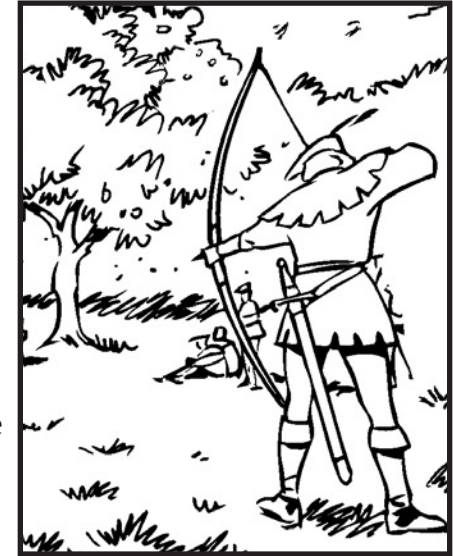
Little John left in the middle of the night, taking the silver plates with him, but Robin Hood remained in the Sheriff's home, still disguised as a butcher. The next day, he escorted the Sheriff out into the countryside under the **pretense** of showing him a herd of cattle he wanted to sell cheaply. The greedy Sheriff followed along, unwittingly, right to the edge of Sherwood Forest. Suddenly, Robin blew a signal on his horn and the Merry Men appeared, surrounded the stunned Sheriff, and drove off his hapless guards. Deep in the woods, they sat him down at a delicious feast—served on the Sheriff's own stolen silver plates! After the feast, Robin Hood sent the Sheriff home, humiliated but unharmed. For no matter how cruelly the Sheriff was treating other people, the Merry Men were political outlaws, not murderers. Being sent home with his life intact did nothing to soften the resolve of the furious Sheriff. He vowed again to capture and hang the hated Robin Hood.



Every evening, the Sheriff paced before his enormous fireplace and complained to his wife, the Lady of Nottingham. He railed about the stupidity of his guards. He wracked his brain, trying to think of a way to catch the thief, once and for all. "I've got it," said the Sheriff one evening. "By trickery I'll catch the **knave**. I'll hold a great archery festival, and hither will come the finest archers in all of England to shoot for the prize I'll create—a gold-covered arrow. Surely, this will draw out Robin Hood and his men, and I will have them."

The Archery Festival

When news of the great archery festival reached Sherwood Forest, the people were very excited. Robin Hood and his men were indeed drawn to the Sheriff's contest—how could they resist? It would have been very hard for the finest archers in the land to let others compete for the honor of winning the contest while they could



only watch in secret. But wisely, they realized they couldn't wear the familiar green suits they wore to **camouflage** themselves in the forest. They knew that if the Sheriff or his men recognized them in the crowd they would be seized by the guards and thrown in the dungeon of Nottingham Castle. Instead they chose to attend the festival in various disguises. Some dressed as barefoot monks, some as traders, others as farmers and peasants. Robin Hood was the hardest to recognize, for he was dressed from head to toe in the tattered rags of a poor beggar.

Even though Robin was well disguised, his loyal men were worried and begged him not to go. "'Tis a trap for the Sheriff to lure thee to athy death," warned Little John.

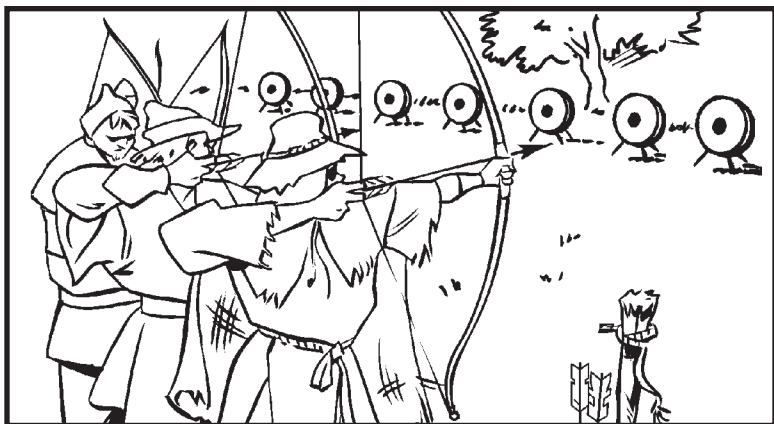
Will Scarlet agreed. "The Sheriff o' Nottingham and his guards shall know thee by thy gold locks and by thine eyes, even if thee don such rags. Please, please do not go to the contest, Robin."



Robin Hood just laughed at his band's worried concern for him. "Why, as to my yellow hair, I can color it with walnut stain. As to my eyes, I can cover one with a patch so that my face'll not be seen in the crowd. I'll look different enough. The Sheriff and his guards do not frighten me—in fact, a bit of danger will make it all the more jolly."



So the brave Robin Hood left for the contest concealed in the ragged clothes of a beggar, and his men left by separate routes, each in his own disguise. They found the field where the contest was to be held a wondrous sight. Workers had set up rows and rows of benches for the viewers to sit on. Festive glee filled the hearts of the people in the crowd, and they had donned their finest attire for the day. All the wealthy lords were dressed lavishly, like brilliant **birds of paradise** strutting in the sun. The Sheriff had on purple velvet while his lady wore blue velvet, both trimmed with pure white fur. They wore broad gold chains around their necks that reflected their great prosperity.



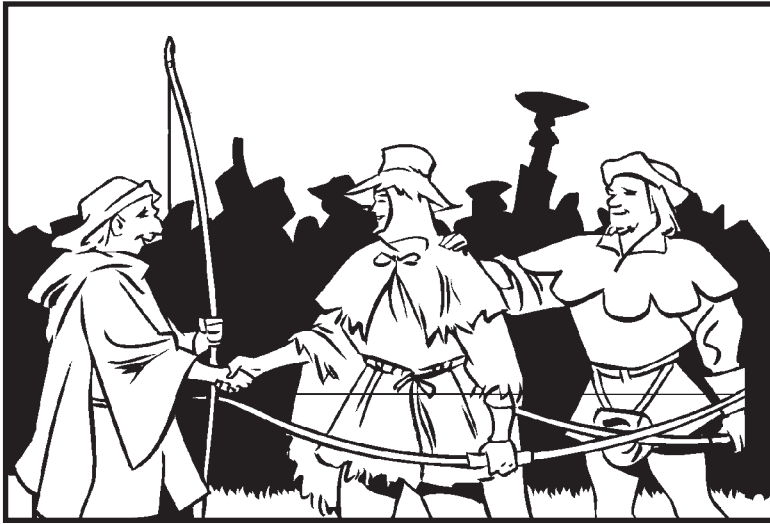
The Sheriff sat uneasily, looking high and low for Robin Hood, searching every face closely while, unnoticed and unrecognized, Robin stood in his beggar's clothes not ten feet from the Sheriff's ornate chair. The Sheriff fumed in his eagerness. Robin would come, he was certain. The targets had been set up eighty yards away from where the archers were to stand—so distant that it was difficult to make out the circles clearly. In the first round, dozens of archers took turns shooting just one arrow, and many missed the target completely and were eliminated. The ten archers who scored best were then allowed to shoot two arrows each. From those ten men, the three best archers would qualify for the final competition. Each finalist would then have three more shots and the golden prize would go to the archer whose arrow hit nearest to the center of the target.

Finally, it was time for the ten best archers to vie for the prize. The Sheriff glared at the ten men. "Fie! Where can he be? I felt certain that Robin Hood would be amongst these final archers," he grumbled to the guard at his side. "Could not one of these men be Robin Hood indisguise?"



"Nay, sir," said the man-at-arms. "Six of them I know well; they are the best archers in England. There's Gill o' the Red Cap, Diccon Cruikshank, Adam o' the Dell, William o' Leslie, Hubert o' Cloud, and Swithin o' Hertford. As to the other four, one is too tall, one is too short, and one is too lean to be Robin Hood. That leaves only the ragged beggar, and too dark is his hair and beard to be Robin Hood, and he is blind in an eye. Robin Hood has stayed away, hiding in Sherwood Forest."

The guard was glad Robin hadn't fallen for the trap, for he didn't want to see Robin harmed. Robin Hood had friends in many places, and even the Sheriff's own guards had helped him get away many times.

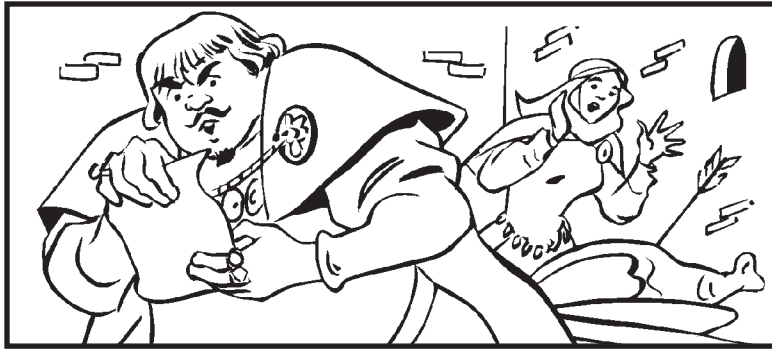


The ten top archers now lined up, aimed, and let their quills fly. The crowd gasped as each arrow struck near the center of the target. When the time came for the last three archers to raise their bows, Gill o' the Red Cap's first arrow struck only an inch from the center. His second and third were even closer. Applause and cheers rose from the benches. Then Robin Hood, who looked to everyone like the poorest beggar in England, stepped forward and pulled back his bow. He stood there a moment, as a breeze blew by, then shot his arrow—straight into the very center! The crowd gasped and then cheered wildly. Adam o' the Dell still had yet to shoot, but instead he unstrung his bow. "An archer for forty years I've been," said the man, "and I'll ne'er do better 'n that."



And so the tattered, unknown beggar won the prized gold-covered arrow that day. But as he handed the prize to him, the Sheriff had a scrunched and sour face and was deep in tortured thought. "Thou art the greatest archer I have ever seen," he said. "Even better than that coward Robin Hood, who dared not show his face this day. Come join my service, then, and I shall pay thee well."

"Nay, I will not," said the ragged stranger, firmly, as he quickly walked away with the arrow. As he left, the Sheriff's words were running circles in Robin's mind. "I cannot bear for him to think I am a coward," he said to Little John. "I wish the Sheriff to know that it was I who won his fine gold-covered arrow today."



The Message

The Sheriff was glum that night at the rich supper table with his wife. "I thought sure to catch that thief with this contest," he said to her. "Perhaps Robin Hood had not the **mettle** to show his face." Right then, a shaft flew through the window and stuck straight into the venison roast on the table. Jumping up from his chair, the Sheriff unfolded the note that was wrapped around the arrow. It identified the beggar who had won the contest as none other than Robin Hood himself. When the Sheriff looked closely at the arrow he realized that it was the very same arrow he had covered in gold and given as the prize! Robin Hood's men had scraped off the gold and kept it. Fooled again!

The duped sheriff upended the table and stormed off, madder than he had ever been in his whole life, while nearby, Robin Hood and his men had never been merrier.

Glossary

birds of paradise (<i>n.</i>)	birds found in warm climates that have feathers of many different colors (p. 14)
camouflage (<i>v.</i>)	to blend in with one's surroundings (p. 12)
knave (<i>n.</i>)	a person who makes mischief (p. 11)
mettle (<i>n.</i>)	courage (p. 19)
pretense (<i>n.</i>)	a pretended purpose (p. 10)
vie (<i>v.</i>)	compete (p. 16)

Reading a-z

Book/Topic: _____

[illegible]

Name _____

Instructions: Read the pronouns in the word box. Then read each sentence. Replace the underlined word or words in each sentence with a pronoun from the word box. Write the new sentence on the line.

I	We	his	you	they
It	He	They	him	them

1. The cruel lords became rich by overtaxing the poor.

2. Each man in his band was devoted to Robin Hood and his cause.

3. Robin and his men would rob the lords of their bulging purses.

4. Robin Hood wasn't afraid of the Sheriff.

5. It was a rugged outdoor life that the Merry Men led.

6. Robin Hood will be careful.

7. "The other archers and I will never be able to shoot better than that."

8. "Robin, this contest is a trap meant to lure Robin to your death."

9. The arrow crashed through the window.

10. Robin and Robin's men had never been merrier.

Name _____

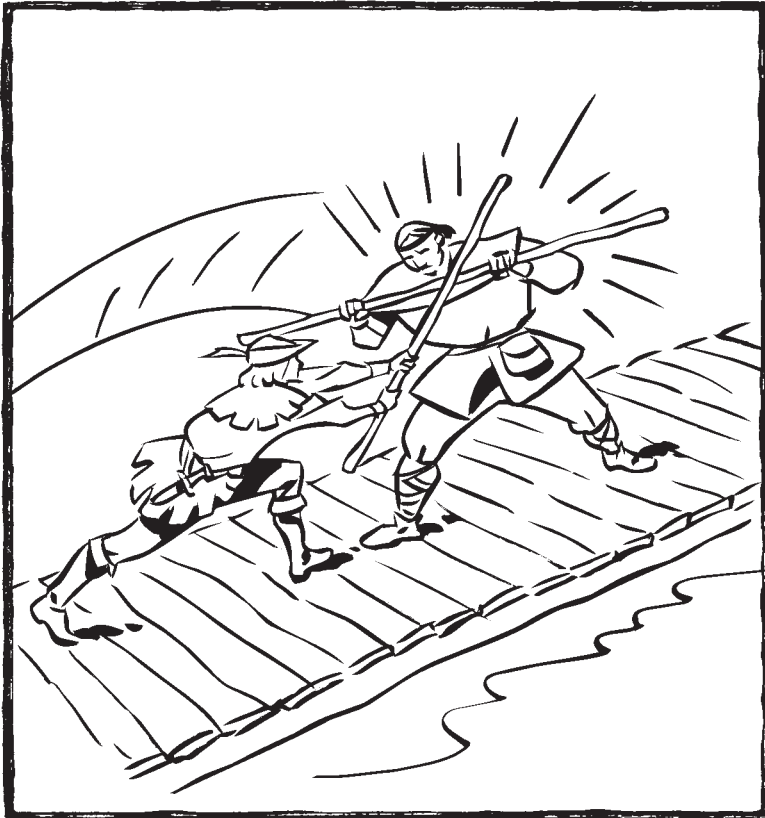
Instructions: Look through *Robin Hood Wins the Sheriff's Golden Arrow* to find twelve adjectives. Write them in the first column. Write a synonym for each adjective in the second column. At the bottom of the page, use two of the synonyms in two sentences. Use a thesaurus or dictionary if you need help.

Adjectives	Synonyms
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
My Sentences:	

How Little John Joined Robin Hood

A Reading A-Z Level Y Leveled Reader

Word Count: 2,114



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This story is an English folktale adapted for Reading A-Z by Katherine Follett from an original retelling by Bertha E. Bush published in 1912.



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Reading Recovery	40
DRA	40

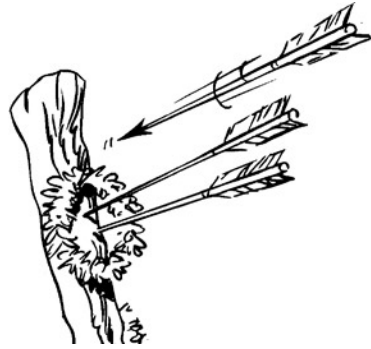
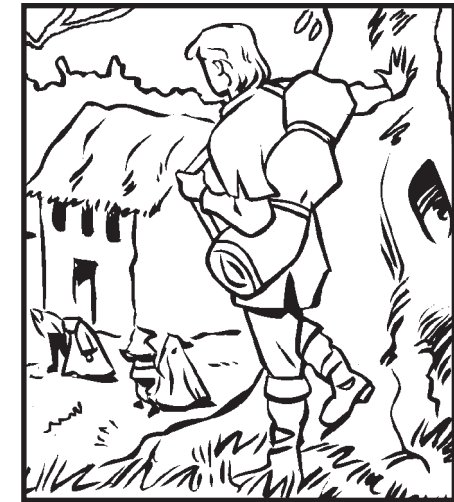


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Introduction

When Robin Hood was still very young, he bore helpless witness as his family and friends were driven violently from their lands; farms were confiscated, homes burned, stock

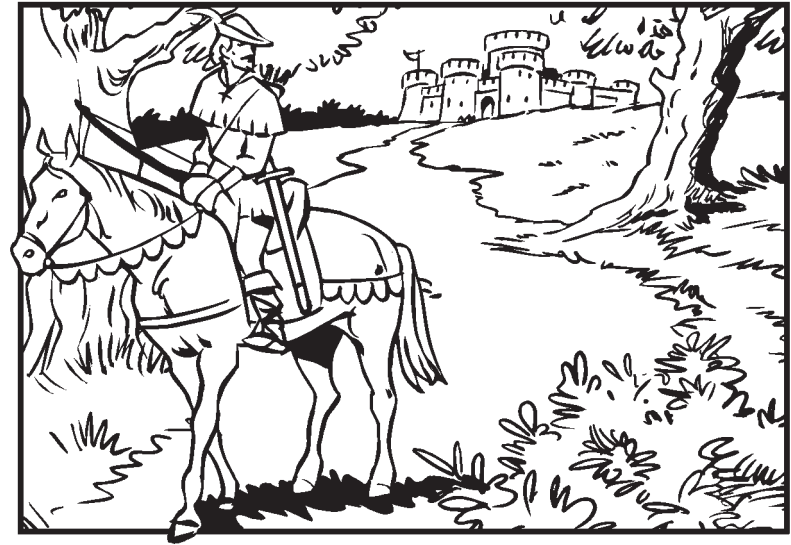


animals taken—and neighbors hanged. England had been conquered in war, and the victors were ruling with an iron fist. People were overtaxed far beyond their ability to pay. When no further taxes could be wrung out of them, their lands and property were taken in payment and divided up between the ruling French magistrates and their **corrupt** partners in the church.

Although King Richard had been allowed to keep his title, the king had been away from England for many years, fighting in the Crusades, and was unaware of what was happening to his people at home. But young Robin knew, and he **vowed** to right these terrible wrongs when he was old enough to fight back.



Robin grew up to be both strong and quick-witted—and an outlaw. His family lands had been taken and his father murdered, and now Robin Hood had become a painful thorn in the side of the corrupt rulers of his country. An **elusive** and embarrassing opponent, Robin was hunted by both the ruling lords and the Sheriff of Nottingham's forces as he harassed, hounded, and enraged his sworn enemies. A hideout deep inside Sherwood Forest was now his home and served as a vantage point from which to watch for likely targets to rob. For robbery was now both Robin's profession and his revenge. His plan was straightforward: since the corrupt rich had stolen from the people without cause or compassion, he would now steal back from those who had profited—and return the money to the poor. Many an unwary traveler or tax collector, loaded down with gold, left the forest feeling much lighter after a roadside encounter with Robin Hood.

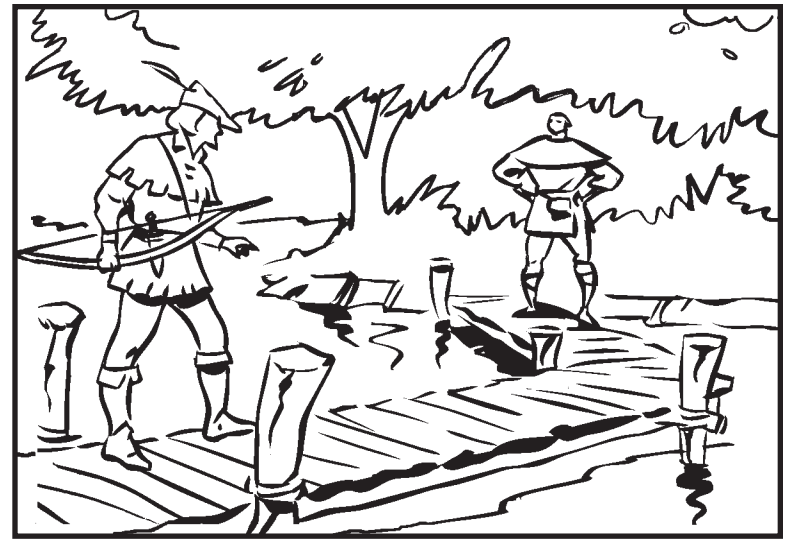


As his bold actions became known, his name became famous and he became a symbol of hope for the common people. And so, his legend grew throughout all of England—as did the amount offered as a reward for his capture.

Such was his fame that brave men from all over England came to join Robin Hood's, and soon a large group of like-minded men lived with him in the forest. They came from all backgrounds; some were men who had lost everything, while others had everything to lose. At his side were David of Doncaster, the cobbler; young Will Scarlet; Much, the miller's son; Arthur a Bland, the tanner; Friar Tuck; and many more **dauntless** souls who had cast their lot with the noble outlaw.



The Merry Men, as the growing band became known, lived a rugged outdoor life. They hunted for their food, cooked their meals over a fire, and slept on deerskins under the stars overhead. Daily, they tested and practiced their skills in archery, wrestling, and sword fighting until they were the strongest and most skilled fighters in all of England. Tales of Robin's adventurous deeds are still told to this day, including the story of how he met Little John, who became his right-hand man and his dearest friend.



John Little

John Little, which was his true given name, had a famous reputation of his own. Everyone said that he was the tallest and strongest man who had ever walked the kingdom—some say he stood over seven feet in height. Others claimed that his legs were each the width of an oak tree and just as strong. And still others swore they had seen him crush a stone into powder with one giant hand. Unlike most men of his time, John Little was loyal to no one but himself; he was not obedient to the tyranny of the ruling lords, nor in sympathetic league with the outlaws of Sherwood. He was such a brave and confident fighter that he felt safest when he was by himself. But his thinking was about to be challenged.

When Robin Hood first saw John Little, John was strolling along the edge of the forest, about to cross a narrow wooden bridge that spanned a stream swollen by rain. The bridge was so narrow that only one person could cross it at a time. As it happened, Robin Hood stepped on it from one side just as John Little stepped on it from the other.

“Nay, there. Step off the bridge and let the better man cross first,” called Robin Hood. Robin did not really think he was the better man, but he wanted to see what this huge man would do. He had never seen a man so mighty in appearance, and yet so agile. Robin knew he wanted the impressive stranger to join his band.

“Fie!” cried the stranger, unconcerned. “Stand back thyself, for *I* am the better man.” John Little laughed, for had never yet met anyone who could match his strength and skill, although he was secretly impressed by the smaller man’s spirit.

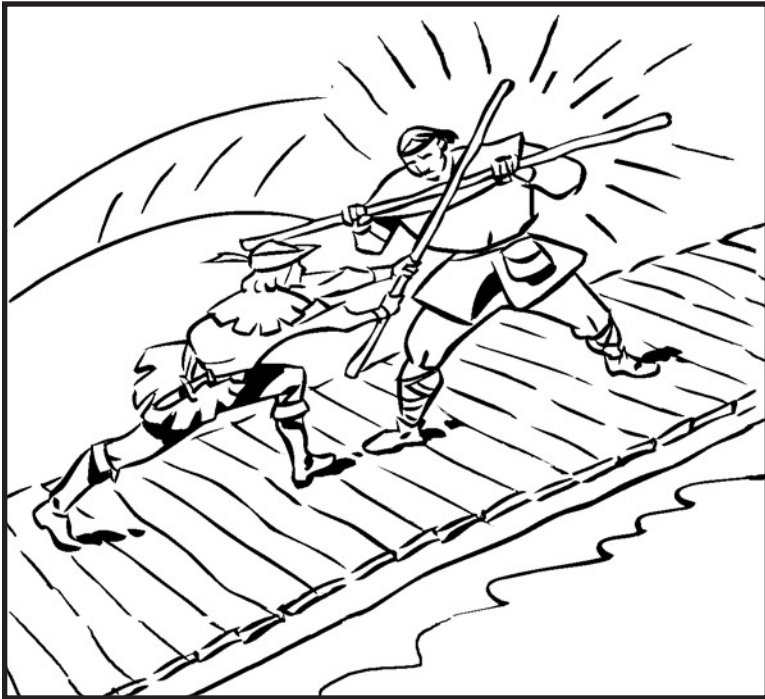
“Aye, then, no choice have we but to fight to see which of us, truly, is the better man,” said Robin Hood, who loved a good fight even better than he loved a good **venison** dinner.

“With all my heart,” answered the stranger with a grin.



The Fight

Robin Hood cut down and stripped two stout oak branches to serve as **cudgels**. He considered it unfair to use his bow and arrows when the stranger didn’t have any with him. “He who can knock the other off the bridge and into the water is the better man,” said Robin. The stranger nodded in agreement as each man grasped his sturdy oaken staff, and the men faced each other as eagerly as two young boys wrestling for fun.



What a great fight it was! *Crack! Crack! Thud! Crack!*—the sounds of the fray rang in the forest air. But each man was so sturdy and so skillful in dodging blows that neither could knock the other down. *Whack! Thump! Whack!*—they spun and parried, thrust and leapt. Each one gave as good as he got, until there were plenty of sore bones and bumps and black-and-blue marks on both. But neither man thought of stopping for such **trivial** concerns as a few bruises and bumps. For a whole hour, they fought on that bridge, yet neither one could knock the other off.

Undaunted, they fought for a second hour while the bridge groaned and creaked. The swollen stream heaved water up onto its planks, making it slick, yet each man held his footing.

Eventually, the sounds of the battle drew many of Robin's men to the edge of the forest to watch in amazement. "Aye. True!" some yelled loyally when their leader struck a hearty blow or made an artful dodge. "Well done!" cheered others, impressed with the agility of the big stranger when he landed a sharp thrust or whipped his great bulk around gracefully. None had ever seen any man give their leader such a fight.

At last, Robin gave the stranger a terrible whack that made him stagger and flail dizzily. But the stranger recovered—and swiftly gave Robin a crack on the head that brought blood spurting from the wound. Robin swung back in retaliation, but the stranger avoided the bold stroke by inches. Blood ran down into Robin's eyes from his wound, and he did not see the blow that tumbled him right into the cold water!

Robin lay there looking up and laughing out loud—for he never carried a grudge. "Thou art an expert with that stick, good fellow; ere today, no man hath beaten me."



Robin Hood's followers took the defeat less lightly. Even those who had cheered for the stranger suddenly stepped from their hiding places with their bows trained upon John Little. There were nearly forty men there that day, all clad in forest green, which had made them utterly invisible amidst the bushes and the trees.

"What happened, master?" asked Will Scarlet. He was beside himself with shock. "Never hath we seen you beaten before. Is this some kind of trick?"

"No, 'tis no trick at all; this sturdy fellow walloped me fair and sent me tumbling into the water," Robin Hood said as he pulled himself up."

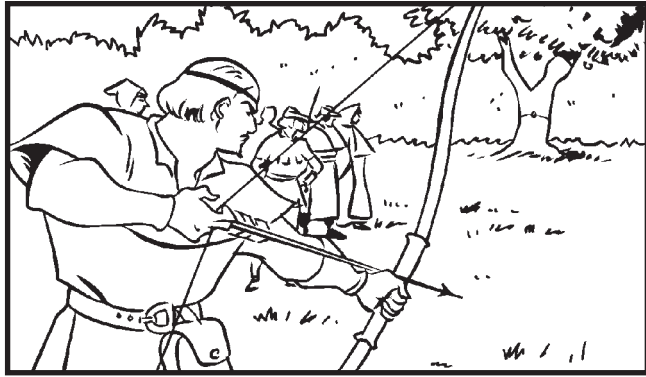
Then a dunking and a beating he shall have as well!" said David of Doncaster. He stormed forward, followed by Will Scarlet, Arthur a Bland, and half a dozen men eager to carry out his threat, but Robin Hood raised a hand and ordered his men back.

"Nay," he said, "**forbear**. 'Twas a fair fight, and he won. He is brave and hearty, and I would have him in our band. Wilt thou join with us?" he asked the stranger "I am known as Robin Hood, and my band is the strongest and bravest in all of England. We steal from the rich and give back to the poor so that all families will be provided for, and justice will one day be returned to England."

Most men would have trembled at hearing the name "Robin Hood," for the lords always described Robin as a cruel and fierce savage, a threat to all. But John Little was afraid of no man, and he'd always suspected that the lords exaggerated Robin Hood's reputation so that they did not appear so foolish after being robbed and outwitted by him.

"Why should I join thy band as an **underling** if I have proved to be a better fighter than the leader? I have no need for those who cannot do better than I can do alone. If any man among ye can shoot a bow and arrow more truly than I can, then perhaps I will join," he said.

"Well, thou art obviously an extraordinary man, but I shall try my best," said Robin with a smile, and John Little found himself once again admiring his opponent's **mettle**.

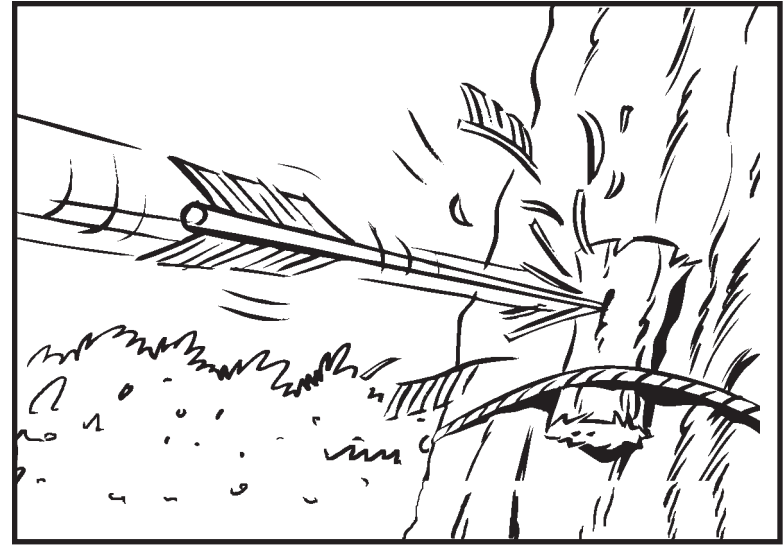


The Archery Match

Robin sent Will Scarlet to cut a three-inch piece of white bark and tie it to an oak tree that stood a full eighty yards away. The piece of bark looked like nothing more than a tiny speck of white at that great distance.

“Now, sir, you may choose any of our bows and arrows to shoot with,” Robin said, with a sweeping gesture.

The stranger studied the bows lined up against the trees. He finally selected the largest bow, **no**cked and aimed his arrow carefully, and shot it directly into the center of the white bark. *Thwack!* The arrow flew so strong and true that only its feathers stuck out beyond the bark. All Robin Hood’s followers caught their breath in amazement, for they had seen such shooting only from Robin Hood himself.



“That is a fine shot indeed,” said Robin Hood heartily. “No one can top that, but perhaps I can shoot one just as well.”

Then Robin Hood drew his own bow and shot an arrow that flew so swiftly and cleanly that it struck the stranger’s arrow dead-on and splintered it into pieces! Robin Hood’s band gave a jubilant roar. The giant stranger’s skill had inspired Robin to do his finest shooting ever.

“Now, good man, may I ask of you again, wilt thou join my band?” asked Robin Hood with a sly smile.

The stranger saw that he had met his match and immediately declared his **allegiance** (ah-LEE-jance). “With all my heart,” he answered.



Little John

From the minute John Little saw Robin Hood's skill, he knew this was a man whom he could respect as he would his dearest friend. Since John had never been beaten before, he knew that for someone to do so required many special abilities.

"What is thy name?" asked Will Scarlet, taking out a writing tablet.

"John Little," answered the large man, and the band of Merry Men around him roared with laughter.

"In sooth, he jests!" cried Much, the miller's son, slapping his knee. *John Little!*

"I do not care for that name," chuckled young Will, "for it does not fully describe thy puny stature! Instead, we shall call thee Little John."

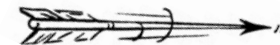


"Come. You are with us now." And so they assembled an enormous feast to celebrate Little John's entrance into the forest clan. By the dying light of the fire, the well-fed Merry Men shared their secret signals and passwords with Little John, a sign that they trusted him as Robin's choice. Soon, Little John became Robin's second-in-command, and no one ever argued with his choice, as John clearly was the strongest and most skilled of them all—next to Robin. And in that role, Little John served Robin's cause faithfully for many years, his deeds adding to their luster, and his love and respect for Robin growing with each passing year.



Glossary

allegiance (<i>n.</i>)	loyalty, dedication to a person or a group (p.6)
corrupt (<i>adj.</i>)	dishonest in order to cheat or gain something (p. 4)
cudgels (<i>n.</i>)	clubs (p. 10)
dauntless (<i>adj.</i>)	fearless (p. 6)
elusive (<i>adj.</i>)	difficult to capture (p. 5)
forbear (<i>v.</i>)	hold back (p. 14)
mettle (<i>n.</i>)	courage and stamina (p. 14)
nocked (<i>v.</i>)	fitted an arrow to a bowstring (p. 15)
trivial (<i>adj.</i>)	unimportant (p. 11)
underling (<i>n.</i>)	a person who is not in charge and who has no authority (p. 14)
venison (<i>n.</i>)	deer meat (p. 9)
vowed (<i>v.</i>)	to promise; to swear an oath (p. 4)



Name _____

INSTRUCTIONS: As you read, list causes in the left column and their effects in the right column.

Topic: _____

Cause	Effect
	
	
	
	
	
	

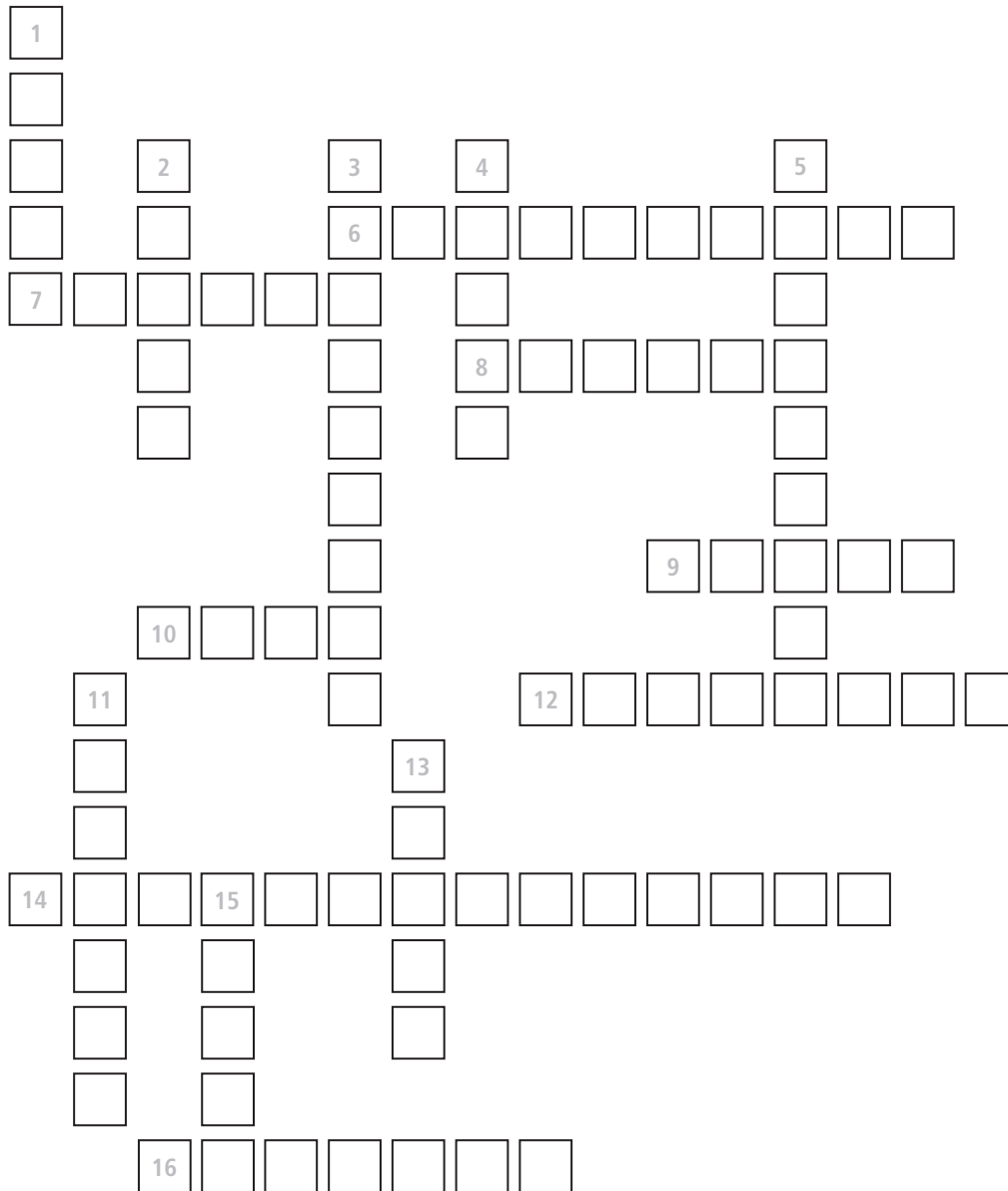
Name _____

Instructions: Fill in the missing present-tense or past-tense verb. Then choose six past-tense verbs and use them to write sentences about Robin Hood and Little John.

Present-Tense Irregular Verbs	Past-Tense Irregular Verbs
choose	
	stole
come	
	struck
leave	
	swung
go	
	caught
say	
	fought

Name _____

Instructions: Use the book to find the answers to the crossword puzzle below.



ACROSS

- 6 Loyalty
- 7 Obeying the law
- 8 A feeling of hostility or anger toward someone
- 9 Able to move one's body quickly
- 10 Robin's best friend
- 12 Wildly, fiercely
- 14 Setting of book
- 16 Name of a European country

DOWN

- 1 To wave one's body wildly
- 2 Promised
- 3 Beating
- 4 Dignified, graceful
- 5 One who is not in charge
- 11 Sport of shooting arrows
- 13 Large, knifelike weapon
- 15 _____ Hood